AALTO UNIVERSITY
School of Science
Department of Industrial Engineering and Management

In search of purchasing maturity - audits and implications

Master's thesis

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ABSTRACT OF THE MASTER'S THESIS

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More than half of companies' total costs are formed through purchasing department. Therefore Purchasing and supply management (PSM) has major direct and indirect impact on the company's bottom line. For that reason developing PSM function is always topical and good way of improving company's performance. The development paths of purchasing department have been described in the literature as purchasing maturity models. This thesis is studying the applicability of these purchasing maturity models and how could the maturity stage of a purchasing department be identified.

The literature review goes through the basic concepts of PSM and how purchasing function can be developed. Different maturity models and methods for recognising the current maturity level are then presented. Three different maturity measurement methods (Schiele, 2007; Rozemeijer, 2000 & Keough, 1993) were chosen for the case studies. The maturity measurements were then conducted to five companies (The City, The Metal producer, The Healthcare manufacturer, The Infra company & The Construction company) from the different industries.

Every case company was analysed individually and together with findings from literature and other case companies. It was found that industry, the size of the company and the interviewee's position had impact on the maturity level and that measuring maturity with only one dimension is not purposeful. Maturity models are at its best in learning purposes and for understanding the possible development paths that companies might want to pursue.

Keywords: Purchasing and supply management (PSM), Purchasing maturity, Purchasing development, Case study

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Yli puolet yritysten kustannuksista muodostuvat hankintojen kautta. Tästä syystä myös suurin osa asiakkaalle tuotettavasta arvosta muodostuu muualla kuin yrityksen sisällä. Hankintatoimella on siis suuri vaikutus tulokseen sekä suoraan että välillisesti. Hankintafunktion kehittäminen on tästä syystä aina ajankohtaista. Erilaisia hankintatoimen kehityspolkuja on kirjallisuudessa kuvattu kehittymis- eli maturiteettimallein. Tässä tutkimuksessa tutkitaan miten näitä malleja voidaan käyttää hankinnan kehitystyössä, sekä millä tavoin yrityksen hankintatoimen maturiteettitaso on mahdollista selvittää.

Työ käsittelee hankintatoimen peruskäsitteet sekä tarkemmin hankintatoimen kehittämisen kirjallisuutta. Kirjallisuuskatsauksessa käydään läpi erilaisia maturiteettimalleja, sekä menetelmiä maturiteettitason tunnistamiseen. Itse tutkimukseen on valittu kolme eri menetelmää (Schiele, 2007; Rozemeijer, 2000 & Keough, 1993) sekä viisi esimerkkiyritystä (Kaupunki, Metalliyritys, Terveydenhoitoalan valmistaja, Infrarakentaja sekä Rakentajayritys) eri toimialoilta. Näiden yritysten maturiteettitasot on tunnistettu haastatteluiden perusteella.

Jokainen esimerkkitapaus on analysoitu erikseen sekä yhdessä kirjallisuuden että muiden tapausten löydöksien kanssa. Tuloksissa havaittiin että hankinnan maturiteettitaso on paljolti riippuvainen: toimialasta, yrityksen koosta sekä haastateltavan henkilön toimenkuvasta ja asemasta yrityksessä. Tutkimus osoittaa että hankinnan maturiteetin tutkiminen yksiulotteisella asteikolla ei ole tarkoituksenmukaista ja että maturiteettitason tutkiminen sisältää aina subjektiivisia tasoja. Maturiteettimallit ovat parhaimmillaan oppimisvälineenä ymmärtämään hankinnan kehittämisen historiaa, jonka avulla tyypilliset virheaskeleet tulevaisuuden kehityssuunnitelmissa osataan välttää.

Asiasanat: Hankintatoimi, Hankintojen johtaminen, Hankintojen kypsyysmallit, Hankintafunktion auditointi, Hankinnan kehittäminen, Osto, Case tutkimus	Julkaisukieli: Englanti

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1 Introduction

1.1 Background and Motivation

"There is always room for improvement."

Networks are today's production facilities. For this reason analysing only the own operations is not enough. Today's competitive advantage comes from the networks of the company where most of the customer value is produced. This makes purchasing management even more important subject to study. Importance of purchasing has changed considerably during the last decades. Increased globalisation, automation of production, growing e-business and outsourcing have changed the nature and importance of purchasing (Zheng, Knight, Harland, Humby, & James, 2007). This trend of increased importance of purchasing can be seen from the figure below (Figure 1), where all material costs of the Finnish companies are presented. Large companies are concentrating on their "core competencies" (Prahalad & Hamel, 1990) and Small and Medium Sized Enterprises (SMEs) being subcontracted in more labour intensive tasks, this can be seen as lowering material costs.

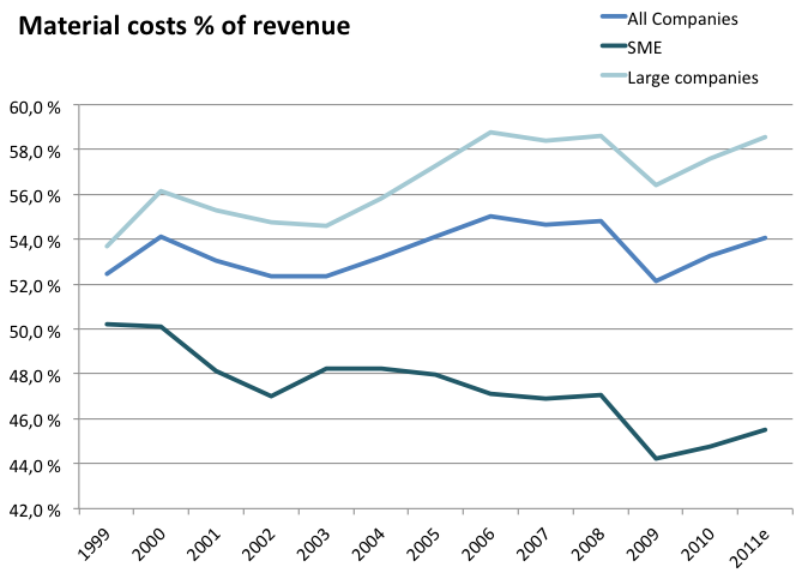


Figure 1: Material cost share of revenue of Finnish companies 1999-2011e (Heikkilä & Koivisto, 2013)

Other sources report that in the automotive and electronics industry suppliers are typically responsible for 60 - 80% of the total value produced by the company (Gelderman, 2003). This means that developing purchasing management is potentially the most important way to increase profitability and return on investment. In addition

purchasing has a major role in improving innovativeness and product development (Schiele, 2007). Other way to increase profitability is to increase the sales volumes or price, by using sales efforts (this is discussed later with DuPont model). If one is planning to raise prices, he will need to have something more to deliver (or monopolistic position), and this is where the suppliers are needed again.

Purchasing is multidisciplinary and it fosters the important collaboration in the interface of internal and external networks. Purchasing should have intense collaboration with all the different functional groups, for this reason hierarchies matter. Purchasing function needs to have a mandate and a place on the executive board, if it is left out hierarchically under operations (or even worse under production), it is then doomed to communicate only with operations (Dubois & Wynstra, 2005). This evolution has been seen in many organisations, while more and more companies are appointing CPO's (Chief Purchasing Officers) (Trent & Monczka, 1998), but still in some companies purchasing has not been taken under managements lens and its potential into use.

At first when developing a purchasing organisation there is a need to know the current state in relation to the desired state. By knowing the company's present state compared to the ideal maturity state, it is possible to know how far the goal is. Ideal is not the same for everyone, as in biology the ideal state evolves over time; it is more about the best fit for the current environment. This analogy works also for purchasing; there is no one best way of operating, but rather it is about best fit for the operating environment. Humans have natural desire for taxonomy and classifying complex things to understandable entities (Gelderman, 2003). This is one of the reasons why academics (Burt, Dobler, & Starling, 2003; Keough, 1993; Monczka, Trent, & Handfield, 2004; Reck & Long, 1988; van Weele, 2005) have defined processes (development or maturity models) for purchasing management development. These models are designed to help in selecting improvement strategies by determining the current stage and identifying the most critical issues in improving the *status quo* (Paulk, Curtis, Chrissis, & Weber, 1993).

Evolution is certainly happening all the time in many different fields, and since purchasing is so closely related to all the other functions of the company, there must be some evolutionary coherence with the evolution of other functions as well. The same changes that have happened to corporate planning (strategy) and marketing are

affecting purchasing management. Purchasing strategy needs to be aligned with corporate strategy (van Weele, 2005). For that reason top management needs to be involved when the purchasing strategy is formed. While companies focus on their core competencies and outsourcing most of the other operations, the importance of using supplier's capabilities to innovation needs to be taken into full advantage. Supply management is extremely important since the suppliers produce most of the actual value.

1.2 Research Problems and Objectives

This research studies the role of purchasing maturity models in development work of a purchasing function. It looks for possibilities to find practical development suggestions for the companies by studying it through purchasing maturity model framework.

Research questions:

- What is the applicability of the purchasing maturity models presented in the literature?
- How can the stage of development/maturity in purchasing be identified in practice?
- How can maturity models be used to develop purchasing and supply management?

The objective of this research is to search theoretical models that describe the development of purchasing as the companies advance with their practices. The goal is to understand better the development needs of purchasing function and possible first steps that companies should take depending on the maturity level they are in. The findings will be useful for business development professionals and purchasing managers as they are looking for ways of continuous improvement and drawing development roadmaps. The thesis will provide insight for the ways of operating in different industries and common challenges and strengths of the case companies.

1.3 The outline of the study

The structure of this thesis follows the way the study was conducted. The Outline of this study is based on six chapters, see summarised outline in Figure 2. Chapter 1 presents the introduction, background of the study and research questions. Chapter 2 is the

literature review where the phenomenon of purchasing and supply management is described briefly. The strategic purchasing and maturity models are then discussed more in depth and the last subchapter focuses on the ways the purchasing maturity can be measured and how it is linked to performance. Chapter 3 outlines the research method that is used to measure purchasing maturity in the case companies and the ways the results are analysed. The methods described in this chapter are based on the findings from the literature review. Chapter 4 concentrates the cases: the case companies are presented, the results from the interviews are analysed and suggestions for improvements are then provided for each case. Chapter 5 concludes the findings from the cases and the results. In addition, the concept of purchasing maturity is observed from different angles and the interview methods are analysed. At the end chapter 6 concludes the findings and provides final answers to the research questions and considerations for future research. Reliability and validity is being evaluated then before the epilogue.

Figure 2: The summarised outline of the study

2 Literature Review

2.1 Purchasing and supply management

Before starting to talk about evolution or the maturity stage of purchasing, the definitions that are used should be clear. Terms used in the literature are very similar and sometimes overlapping (Mentzer et al., 2001). Practitioners will understand when activity or a task is referred to, but the hierarchy or responsibilities within the organisation are easily blurred. The view of Monczka et al. (2011) of purchasing and supply management is used in this study, combined with Van Weele (Van Weele, 2005, p.232) descriptions with levels of tasks, responsibilities and authorities. Supply chain, supply chain orientation and supply chain management will be just mentioned since the focus of this study is in Strategic Purchasing management.

The term *supply chain* consists of all the entities from raw materials to the customer, to emphasise the entity of the supplier's suppliers and consumers the term *ultimate supply chain* is used. The term *direct supply chain* is used only when the institutions directly in contact are examined: suppliers, the organisation and customers (Mentzer et al., 2001). Supply chain consists of the two-way flows of goods, services, information and funds (Monczka et al., 2011; van Weele, 2005). *Supply chain management* is managing these flows and developing the supply chain into the optimal direction to the organisation, which ultimately means towards the customer. Supply chain consists of actions that are not all in the direct control of the company. Supply Chain Management (SCM) then aims at controlling the supply, production and delivery of the product. Therefore supply chain management has many interactions between other functions inside and outside the organisation. Michael Porter was the first to talk about the Value Chain (Porter, 1985). In his framework (Figure 3), procurement is presented as supportive activity while all the other primary activities in this illustration are part of the supply chain management's scope. The term *Value chain management* is used in some writings but basically it means the same thing as supply chain management, only the focus is deeper in the delivery of value to the customer.

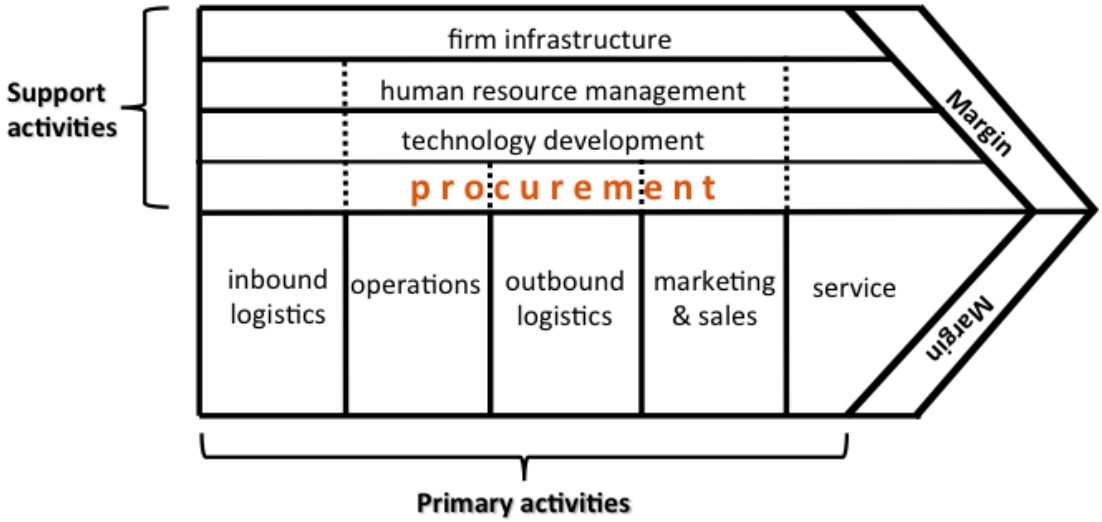


Figure 3: Value Chain of a company (Porter, 1985)

Supply chain management (SCM) can be expanded to the demand-supply chain management (DSCM), which takes the broader view on controlling this whole two-way chain by also including the demand chain in the picture (Hoover, Eloranta, Holmström, & Huttunen, 2001). This view explains the complexity and interconnectedness of the whole phenomenon; one must have a systemic view on the whole process and understand how everything is interconnected. Like Senge (1990) presented: "Cause and effect are not closely related in time and space". In order to manage as complicated things as supply-demand chain one need to have a holistic and a systemic view.

This study focuses on purchasing. The most widely used concept within this domain is purchasing and supply management (PSM) which is an umbrella term for everything that is done within the external resource interface (see also External Resource Management (Lamming, 1993)). PSM consists of supplier selection, supplier development, facilitating and collaborating within the company, negotiations and basically everything that is happening within the supply networks of the company. Purchasing and Supply management can be treated as separated terms as Monczka et al. (2011) does or as one term, PSM, as the distinguished journal within this domain does: "The Journal of purchasing and supply management". *Purchasing* is simultaneously a functional group and a functional activity.

Van Weele (2005) makes the difference between purchasing and supply management by adding logistic activities to procurement and separating supply and sourcing, this is illustrated in Figure 4 below. In this view, supply is the operational side of purchasing

and then sourcing (specifying, selecting and contracting supplier) is the tactical side. The strategic side in Van Weele's view is the strategic decisions, which are presented later. According to Monzcka et al. (2011) supply management consists of sourcing and managing purchasing. In this thesis purchasing is used to describe the function and processes and everything that can be addressed under PSM.

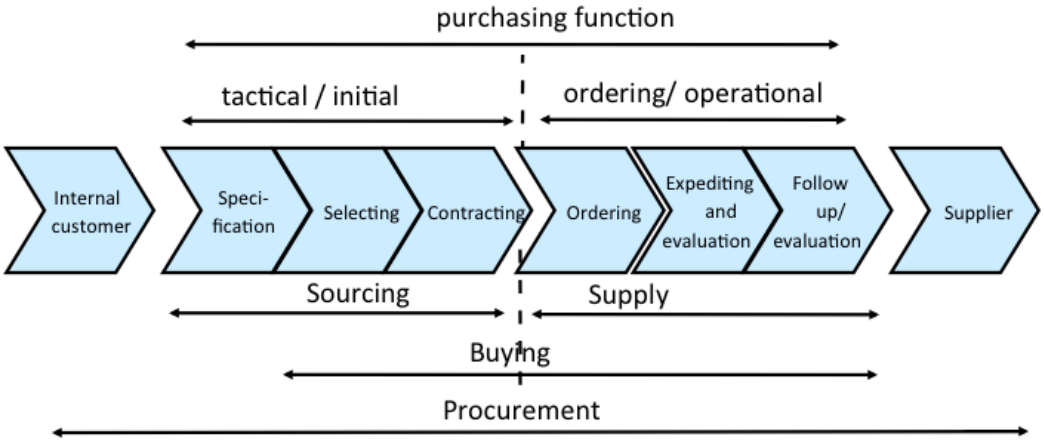


Figure 4: Concepts of in purchasing (Van Weele, 2005)

Dubois & Wynstra (2005) and van Weele (2005) are using one more layer of concepts here by dividing purchasing into strategic, tactical and operational levels. Strategic has long-term, tactical medium term and operational short-term impact; this is one way of presenting the classification with time of influence (it can also be done with competitiveness or customer effect).

Threefold structure is used also in A.T. Kearney's "House of Purchasing and Supply management" framework (A.T. Kearney, 2011, see Figure 5), where the levels are Strategic direction, Value adding processes and Key enablers. In this view the importance of taking care of basics is emphasized. At the bottom of the house there are the foundations: performance management, knowledge/information management and human resource management. The role of human resource capabilities has been emphasised in many studies recently (Feisel, Hartmann, & Giunipero, 2011; Giunipero, Handfield, & Eltantawy, 2006; Keough, 1993; Monczka & Petersen, 2012), since purchasing is interaction with people (suppliers and other functions). The interpersonal skills among others play an important role. While most of the decisions are made with objective criteria and companies are doing everything they can to remove the human

factor from the purchasing process, it is indisputable that personal relationships and interaction are and will always be important part of the purchasing work.

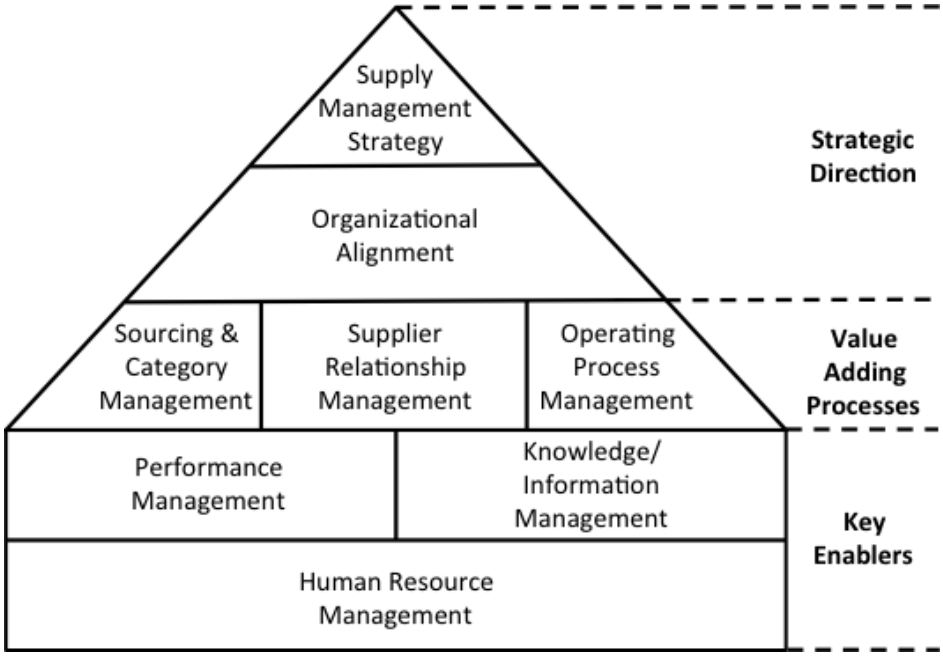


Figure 5: A.T. Kearney's (2011) House of Purchasing and Supply Management™

2.1.1 Strategic, tactical and operative purchasing

Jay Forrester recognized the strategic importance of supply chains already in 1958 in his classic article "Industrial dynamics". He described and introduced the Forrester-effect (also known as bullwhip effect) and emphasised the meaning of understanding the dynamics of the whole supply chain, in order to avoid pronounced fluctuations in the demand and therefore supply (Forrester, 1958). Other scholars have also requested more power and recognition to purchasing, e.g. Bruce Henderson in his 1965 article: "The Coming Revolution in Purchasing" and Peter Kraljic in his 1983 article "Purchasing must become supply management". The last article accentuates the importance of proactive management of suppliers in purchasing function and introduces the famous Kraljic-matrix (profit impact – supply risk, see Figure 6). The matrix is still widely used in many companies and probably the best-known purchasing tool. As the heading of the Kraljic's article says, purchasing must be more than just a clerical servant of the production and using the strategic supplier management costs can be reduced and the value delivered increased. During that time the influence of purchasing on overall performance was steadily rising and it was moving away from the control of materials management. Even though that was recognized already 30 years ago, academics are still

demanding actively more attention to the purchasing function in their articles (e.g. Gottfredson, Puryear, & Phillips, 2005; Keough, 1993; Morgan & Monczka, 2003)

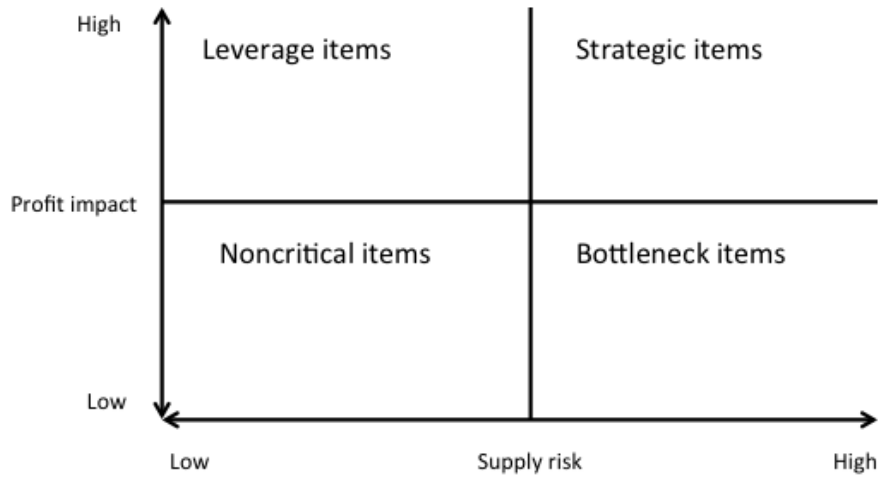


Figure 6: The purchasing portfolio matrix by Peter Kraljic (1983)

The role of purchasing has been changing recently and the main reasons for that are E-commerce, globalisation and outsourcing. The increased possibilities of automation and outsourcing of purchasing activities will have now and in the future impact on the role of purchasing (Zheng et al., 2007). As the share of purchasing spend[1] is increasing (see Figure 1), there is a growing need to manage that spend better, which means new methods, processes and skills needed for PSM professionals.

Kraljic's article (1983) provided the idea that purchasing management has different levels of operation; Van Weele (2005) gives a good illustration of the different levels and people involved in decision-making (Figure 7). This frame, used already in classifying the purchasing and supply management field, shows the managerial levels that are involved in the purchasing decision-making. Cross-functional teams and collaboration are necessary at all levels, but it shows how these different tasks and responsibilities are seen (van Weele, 2005). Especially in purchasing and supply management it is important to divide tasks to separate levels, since practically everything is interconnected, and there is the risk that conversation would end up in details. This thesis will focus on the strategic level of purchasing. Next the essences of different layers are being explained briefly.

[1] The term **spend** that is used to describe the amount of money that purchasing is spending, spend analysis is usually the first analysis done when developing purchasing.

	Managerial level				
	Top management	Logistics manager	Purchasing manager	Senior buyer	Buying assistant
Strategic level	X	X	X		
Tactical level		X	X	X	
Operational level				X	X

Figure 7: Managerial involvement in levels of purchasing: relationship between the three managerial levels and some management positions (van Weele, 2005)

Operational purchasing includes the day-to-day routines of purchasing. Tasks at this level will keep the operations running, such as: ordering materials, monitoring deliveries, settling quality disputes on incoming materials and evaluating supplier performance (van Weele, 2005). The operational level can also be called the functional level of purchasing (Seshadri, 2005). Tasks of this level can be easily automated or offshored to the countries with cheaper labour.

The tactical level of purchasing has a lot of cross-functional elements, since decisions made at this level have the medium-term impact (one to three years) on business. In the tactical level decisions comprise product standardisation, value analysis, process improvements, auditing suppliers, selecting and contracting suppliers. These are also quite general tasks that most of the companies work with, only the levels of sophistication within these actions vary.

At the strategic level of purchasing the decisions are made with top management, logistics manager and purchasing manager. At this level, decisions have the long-term view and they influence on the company's market position and competitiveness in the long run. Decisions at this level are such as: developing operational guidelines and auditing processes, make-or-buy decisions, creating close relationships with suppliers (partnerships or co-design agreements), single or multi-sourcing, major investments and policy developments (van Weele, 2005). Top management naturally is involved in decisions this important, but the decisions are still part of the purchasing domain and PSM strategy. More about strategic purchasing and supply management will be discussed in Chapter 2.2.

2.1.2 Brief history of purchasing

Purchasing has its roots in materials management; first mentions about purchasing were mentions about "materials man" (Iloranta & Pajunen-Muhonen, 2008), where its responsibility was to make sure that there were enough materials and that factory or production was kept running. One of the first guidelines to purchasing was in *the Handbook of Business administration* by the American Management Association (AMA) in 1931 (American Management Association, 1931). In this book it was noted that 57% of the total costs of manufacturing industry was incurred in the purchasing of materials and that the basic form of purchasing department should address six major aspects: administrative aspects, ordering, payments and accounting, economics, inspection and salvage. These aspects would form the purchasing function and then principles to the ways of operating would follow from there: centralisation, co-ordination, standardisation, aggressive fair play and honest, able, calm people (Syson, 1992). These aspects and principles haven't lost their meaning during the time and as can be seen from the maturity models later, this represents the most basic view of the function, being clerically and transaction oriented (Syson, 1992).

Purchasing has slowly evolved under operations function and then finally it has received its place of being a separate function. A good way to describe the evolution of purchasing is to use the terms that have been used before: from materials management to buying, purchasing to procurement, and from supply management to supply chain management (Paulraj, Chen, & Flynn, 2006). Purchasing and supply management (PSM) is the current way of describing the domain of purchasing.

During the history and evolution of the purchasing domain, the terms used have been changing according to the present trend. The journal of The Institute of Supply Management (ISM) has had several names during its time: the Journal of Purchasing (1965-1974), the Journal of Purchasing and Materials Management (1975-1990), the International Journal of Purchasing & Materials Management (1991 - 1998), the Journal of Supply Chain Management (1999 - present). Also the institute has changed its name during the time: National Association of Purchasing Agents (NAPA, 1915), National Association of Purchasing Management (NAPM, 1968) and finally to Institute for Supply Management in 2002. These changes in names illustrate the changing nature of the domain during the time, the responsibility of purchasing has evolved to include more

supply thinking, not just strictly buying and ordering. It illustrates the change from functional/departmental to process thinking in purchasing.

More about the histories can be read from the following sources (Gelderman, 2003):

- Purchasing function: (Monczka et al., 2011; Syson, 1992)
- Purchasing and supply management (Trent & Monczka, 1998)
- Strategic purchasing (Ellram & Carr, 1994)

2.2 Strategic purchasing

There is a need for the strategic level to prevent the so-called "fire-fighters syndrome", where long-term choices are dominated by "urgent" day-to-day tasks (Dubois & Wynstra, 2005). Strategic purchasing can be seen in many ways, for example sometimes in colloquial it seems that strategic is a synonym for important. That view is true in a sense that strategic issues are important because strategic decisions have effect on long-term actions, other levels and competitiveness. Increasing strategic focus on purchasing has been emphasised in many articles (Giunipero et al., 2006) and the link to better performance has also been proved in academic studies (e.g. Chen, Paulraj, & Lado, 2004). The strategic approach to purchasing means to focus on the long-term possibilities and opportunities. This means responding to low material availability with strategic alliances and better planning, rather than extra inventories or to insufficient capacity with supply chain management, rather than expediting and harassing the supplier (Giunipero & Eltantawy, 2004).

During the time the strategic role of purchasing evolved from "buying" to "procurement" and to "supply management". As the terms used in literature has changed so has the focus (Paulraj et al., 2006). Buying has its main focus on the transaction, basically purchasing only in the price negotiations and handling the material flow. The procurement view then expands this view to see the whole process and involving purchasing even earlier in the process of making specifications and choosing the suppliers. Then the last phase, where we are now, is integrated with all the functions and involved in studying the supply base and creating competitiveness to firm.

According to Ellram and Carr (1994) purchasing strategy can be divided into three distinct types:

- Specific strategies employed by the purchasing function
- Purchasing's role in supporting the strategies of other functions and those of firm as a whole
- The utilization of purchasing as a strategic function of firm (*strategic importance of purchasing*)

In this thesis all of these views are taken into use when talking about purchasing strategy, to conclude: Purchasing strategy is done based on the company's strategy and it is done for the function in order to work according to the whole strategy. When these are aligned, purchasing will be strategic function delivering value to the company and customers.

2.2.1 Supply strategies and strategic decisions

Corporate strategy defines the long-term objectives and purposes of the organisation and sets the targets for purchasing. What strategy is and what it should consist of, is a question that has been discussed for many years in different battlefields. In this thesis, strategy is defined as the objectives to corporate actions. When defining the purchasing strategy, the first step is to internalize the corporate strategy and make sure that that there is no conflict between purchasing objectives and corporate objectives. Overall PSM strategy will be about the objectives, purposes, policies and goals about the purchasing, but the actual strategy will emerge in form of commodity or supplier strategies.

Commodity or category management defines the entities that decisions are made for. In order to make a decision about what will be made and bought, the end product must somehow be divided to pieces that will be sourced, for example into components. Then these categories will be analysed and the actions will be taken according to the analysis done. Categories can be segmented in multiple ways: according to the use of the product (end-product, division, indirect/direct..), the type of product (raw material, component, services), and the source of the product (supplier, industry, product family). There are different taxonomies that can be used to define as a category, and then those categories will be managed with different strategies.

Kraljic (1983) defined four different supplier strategies and category characteristics, which he divided using two variables: supply risk (complexity of supply market) and

profit impact (importance of purchasing); see the Kraljic's matrix in Figure 6. Using this balancing of power relations, he concluded that categories are: strategic-, bottleneck-, leverage- or noncritical items. Respectively the strategies for them are Supply management, Sourcing management, Materials management and Purchasing management, see Table 1 for details (Kraljic, 1983). Purchasing management (or Category management (van Weele, 2005)) in this respect means that no special attention should be given to those products and they should be bought in the way that the "factory will keep running". These strategies provide the basic idea of understanding how sourcing should be managed, but doesn't actually provide anything more than a framework of what kind of possibilities there are, and there are many. There are different purchasing portfolio models presented later, but they are more or less modifications of Kraljic. Variations can be found in categories, dimensions or recommendations (Gelderman, 2003). The most important reason for using the portfolio models is the clear structure and ability to easily present reasoning behind the actions. Advantages of the models are that they force to think about categories in a structured format. It was found that all the models follow the process of diagnosis, objectives and strategies. The positioning in the matrix is just the starting point, and the most important thing is that these frameworks facilitate the important discussions about the purchasing strategy (Gelderman, 2003).

Table 1: Four basic supplier strategies and its abilities in Kraljic's matrix (Kraljic, 1983) combined with strategies suggested by van Weele (2005)

Strategy	Purchasing management	Materials management	Sourcing management	Supply management
Procurement focus	**Noncritical items** (e.g., steel rods, coal, office supplies)	**Leverage items** (e.g., electric motors, heating oil, EDP hardware)	**Bottleneck items** (e.g., electronic parts, catalyst materials, out-side services)	**Strategic items** (e.g., benzol cyclo-hexane, scarce metals, high-value components)
Key Performance criteria	Functional efficiency	Cost/price and materials flow management	Cost management and reliable short-term sourcing	Long-term availability
Typical sources	Establish local suppliers	Multiple suppliers, chiefly local	Global predominantly new suppliers with new technology	Established global suppliers
Time horizon	Limited; normally 12 months or less	Varied, typically 12 to 24 months	Variable, depending on availability vs. Short-term flexibility-trade-offs	Up to ten years; governed by long-term strategic impact (risk and contract mix)
Items purchased	Commodities, some specified materials	Mix of commodities and specified materials	Mainly specified materials	Scarce and/or high value materials
Supply	Abundant	Abundant	Production-based scarcity	Natural scarcity
Decisions Authority	Decentralized	Mainly decentralized	Decentralized but centrally coordinated	Centralized
The Strategy suggested by Van Weele (2005)	**Category management**	**Competitive bidding**	**Secure supply**	**Partnership**

According to Monczka et al. (2011) for every category there is a different supply management strategy that can be chosen and utilized for. Some of these stategies include:

- Insourcing/Outsourcing
- Supply base optimization
- Total Quality Management (TQM)
- Global sourcing
- Long-term supplier relationships
- Early supplier design involvement
- Supplier development

- Total Cost of Ownership (TCO)

There could be even books written about these different strategies (and there are). For the purpose of this thesis, these strategies will be just gone through briefly to get an idea of their meaning:

Insourcing/Outsourcing

In- and outsourcing decisions have a long-term impact, and those decisions should be made carefully. Recently, the outsourcing activities have been popular, but it has its risks of losing important know-how, control and innovation abilities to suppliers. Most of these decisions have their roots in "core competence" thinking, which states that company should focus on what they do best while outsourcing the other things. Recently, companies have started insourcing activities that were previously outsourced. This is happening because of the hidden costs of outsourcing have actually been higher than the promised savings or the promised benefits were never even achieved.

Supply base optimization

Supply base optimization has its roots on optimizing the transaction costs and the relationship benefits to have the right amount of suppliers. There is a certain amount of cost benefits that can be achieved by tendering and using multiple suppliers and the amount of benefits that can be achieved with deepening the relationship. Resources should be focused on negotiations where savings can be achieved. There is no point using too much time on purchasing processif the potential value added is less than the value of the time used.

Total Quality Management (TQM)

TQM aims to improve the quality within the supply base, so that quality costs would be minimized as well as the amount of time spent on processes that are not delivering value. This needs supplier development and long-term relationships.

Global sourcing

By expanding the reach to global suppliers, more possibilities and opportunities can be found from suppliers. Even if this would lower the direct costs of goods, it might have indirect costs such as costs caused by risks, increased working hours, longer lead-times

and communication barriers. Just as in supply base optimization right way needs to be considered holistically and understanding the context. It is not always cheaper to outsource to low-cost countries (or best-cost countries).

Long-term supplier relationships

Long-term relationships usually aim to reduce transaction costs (tendering process, auditing and others) and trying to find mutual win-win situations, where the supplier can develop and bring more value to the table. During the 1990's there was an increasing amount of writings about partnerships (e.g. Lambert, Emmelhainz, & Gardner, 1999; Lamming, 1993), but this view is not going to be successful without balancing the power relationships and other aspects. As a conclusion, creating a lasting partnership the relationship requires work and investments, and it's not always worth investing.

Early supplier design involvement

Early supplier design involvement is used in the engineering and the design phase, due to increasing costs when moving forward in the product design process: the earlier the changes in design are made, the cheaper the changes are, whereas late changes are expensive. Managing this process is demanding when there is a need to find balance with openness, protecting innovations and working methods. There is also risk of getting locked-in to one supplier if the product is designed so that the supplier cannot be replaced.

Supplier development

Supplier development means spending time and money to develop your supplier. Even though tendering could sometimes bring savings, developing suppliers can bring lasting benefits and win-win for both sides. In this aspect it is optimising the switching costs. Since acquiring a new supplier is costly, would it be cheaper to invest that money in developing supplier's processes?

Total Cost of Ownership (TCO)

TCO is very important aspect and it is more like philosophy than decision. When comparing offerings with TCO view, all the costs related to purchasing and lifetime of the products are taken into consideration. TCO can be divided into three major

categories of components, which are: Pre-transactional, transactional and post-transactional components. Under every category there are several components which should be taken into consideration when calculating TCO (Ellram, 1993).

2.2.2 Organising purchasing and supply management

Finding out what category or commodity segmentation is used will have an influence on the decision on how purchasing should be organised. One debate that hasn't yet been discussed is the question of centralized and decentralized purchasing. Both of these have their own benefits and challenges: globalisation, standardisation and efficiency pressures are pushing towards greater centralisation, while customisation, differentiation and responsiveness pressures push towards greater decentralisation (Dubois & Wynstra, 2005). The current trend seems to be towards the hybrid version of these two, the coordinated- or centre-led purchasing (Rozemeijer, van Weele, & Weggeman, 2003).

Centralised purchasing has its benefits in collecting information and controlling operations that can bring a lot of savings when consolidating the volumes; this view assumes that costs can be taken down by increasing purchasing power. Centralised purchasing also has its advantage in standardisation, optimising product specifications, finding the best global suppliers and having "one face" to the supplier. According to Gadde, Håkansson, & Persson (2010) the main "internal" reason for centralisation is that it promotes professionalism among buyers and that resources can be allocated efficiently. On the other hand, centralising activities will easily lead to excess bureaucracy and delays in the process, which can harm innovativeness and ability to react changes in the marketplace.

Decentralisation makes the purchasing function in the business unit more independent and it allows decisions to be made fast and for the benefit of the unit. The problem is to find synergies in processes and purchasing volumes. When purchases are made in multiple divisions, it might be hard to find synergies and use purchasing power with lower volumes. It is easy to state that everything should be centralised, since there one can estimate the costs of savings that would possibly happen and forget all the bureaucratic problems that it will cause (Karjalainen, 2009).

The optimal organisation for purchasing department has suggested to be hybrid organisation (Dubois & Wynstra, 2005) also called centre-led purchasing (Rozemeijer et al., 2003). Also Kraljic suggested in 1983 that companies should have some categories decentralised and some centralised, see Table 1 for details. On the other hand the best way of organising purchasing depends on how that company is organised, it would be strange that decentralised organisation would have centralised purchasing. It can also be seen in organisational growth model by Greiner (1972) (Figure 8) that centralised and decentralised structures are important phases during the development, but in the higher phases the structure is somewhere in between. According to this model, companies are first developing through creativity, and after company grows there will be the need for hierarchy and direction. This is called the leadership crisis, which will lead to growth through direction. When the amount of direction increases and company grows further, there will be a need for greater autonomy, hence the *crisis of autonomy* occurs. After crisis there will be growth through delegation, which will give more responsibility to divisions, but will eventually lead to lack of coherence in the organisation, and so on (Greiner, 1972). This illustrates that there is no optimal organisational or purchasing structure; it is highly dependent on the conditions and stages of growth. Model in Figure 8 also provides a good view for understanding how organisations develop through crises; it is clear that these organisational changes will have an effect on the purchasing processes and the organisation as a whole.

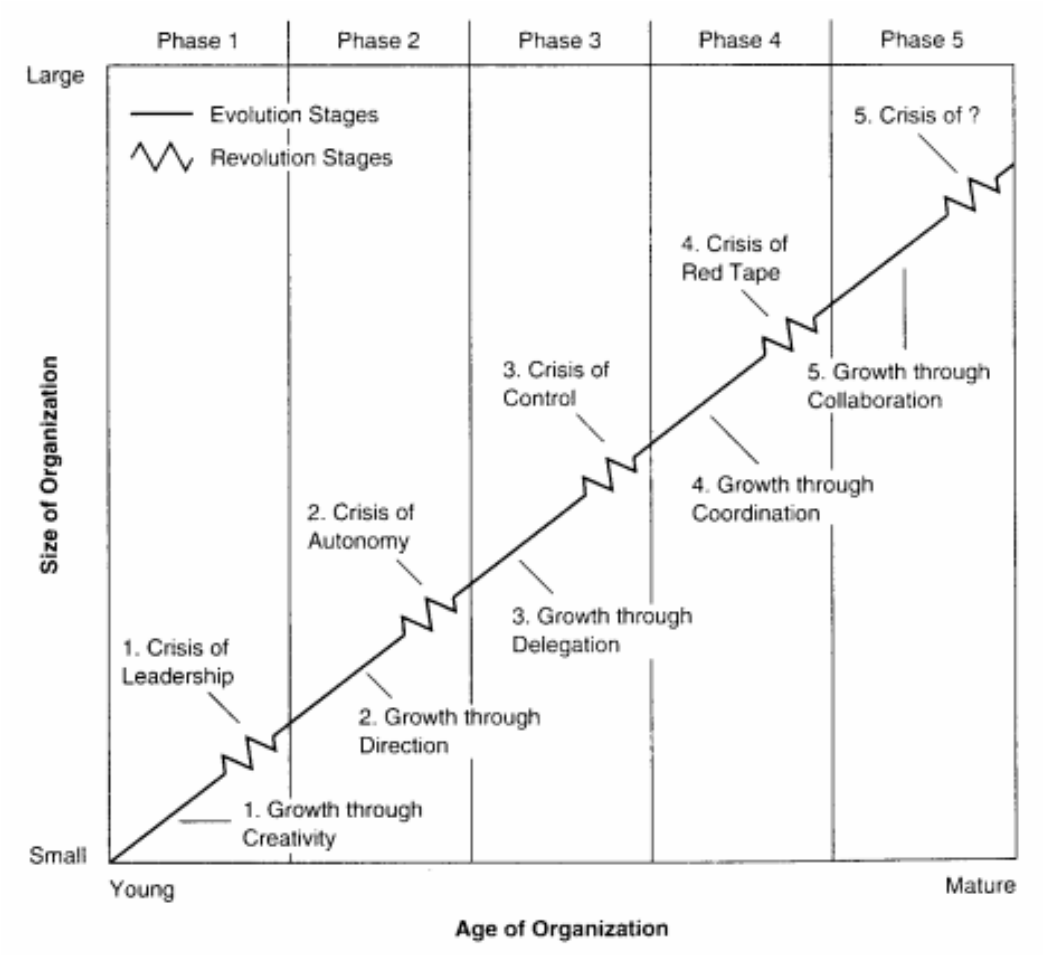


Figure 8: The five phases of organisational growth (Greiner, 1972)

Applying from the work of Greiner in the organisational growth model, Rozemeijer (2000) presents how different corporate structures have been developed over time and what are therefore the natural organisational structures for purchasing function. It shows how the preferred structure has been varying during the time and that both centralised and decentralised options has had their moments, see Table 2 below for details.

Table 2: Different corporate structures and their development over time (Rozemeijer, 2000)

Period	Corporate structure	Corporate management focus	Crisis	Purchasing function
1950' s	Functional	Vertical synergy	Co-ordination overload and bureaucracy	Centralised?
1960' s	Divisional	Financial control	No co-ordination	Decentralised?
1970' s	Hybrid/Matrix	Horizontal synergy	Too much co- ordination too little results	Centralised?
1980' s	Business unit	Financial control	Focus too much on BU results, too little synergy	Decentralised?
1990' s	Centre-led	Synergy and financial control	??	Centre-led? (Cross-functional and cross business

This aspect presented above has been an inspiration for looking at the purchasing organisation through purchasing maturity and corporate coherence, and using these variables to find the optimal way of organising the purchasing function (Rozemeijer et al., 2003). This framework in Figure 9 presents the different corporate purchasing organisational approaches. Corporate coherence here is the corporate attitude towards synergies; meaning the internal collaboration and how synergies are managed with other functions. Maturity means somewhat purchasing sophistication, but it will be discussed more in detail later. Implication is that these either centralised or decentralised selections are the forms that work best with the companies with low maturity in purchasing, structures that are combinations of these two work better with more mature purchasing organisations (Rozemeijer et al., 2003).

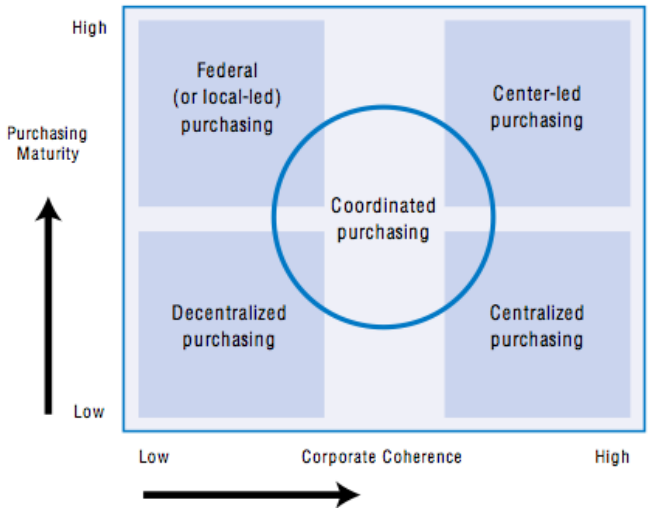


Figure 9: Corporate purchasing organisational approaches (Rozemeijer et al., 2003)

2.2.3 Developing purchasing and supply management

Especially in the economic downturn, companies are focusing more to profitability improvements. The first thing that is usually done is to cut costs, but there are also several other actions that could be done to improve profitability. The modified DuPont –analysis[2] presented in Figure 10 provides the basic actions that can be done to improve profitability. Some of the actions can be implemented faster and some are more long-term, the ones where PSM has major impact are marked with red. The fastest way to get profitability impact is to attack purchasing processes: to use stricter cost control, combine volumes and focus on tendering. The good thing about costs savings is that all the euros saved are going straight to the bottom-line. To get the same profit out of that 1% cost saving in purchasing, the company would have to sell 10% more (given that profit margin is approximately 10%). Even better is that company can sell 10% more and have savings, if applying the right strategy for the savings initiative. This assumes that cost savings will not have any negative effect on other things such as customer service or product quality.

[2] DuPont analysis is an expression, which breaks Return On Equity (ROE) into three parts: profit margin, asset turnover and equity multiplier. The name comes from the DuPont Corporation that started using this formula in the 1920s.

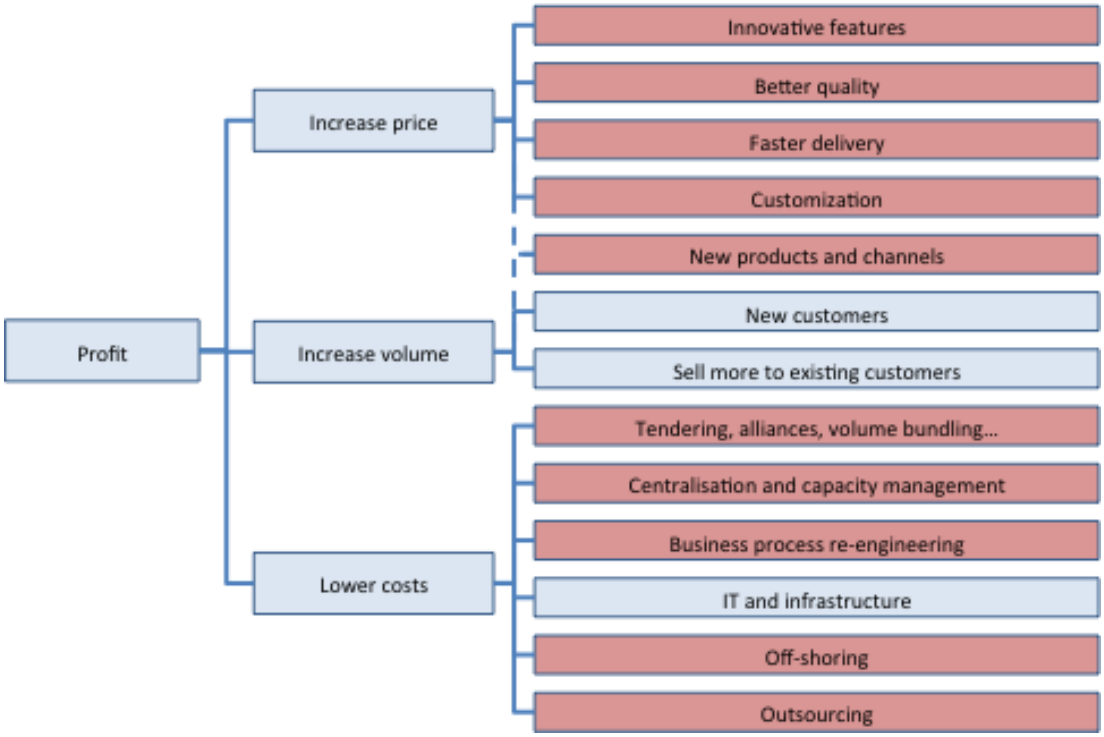


Figure 10: Ways on increasing profitability (modified DuPont -analysis), the ones where PSM can have major impact marked with light red.

However, PSM does not only affect on itself, but it also has indirect effects on new product development, partnerships, marketing and sales (Gottfredson et al., 2005). For these reasons, developing PSM is important and not only with the cost saving initiative since it provides competitive advantage in many other ways too.

The development of PSM must be holistic. It has been found in many studies that best performance is achieved with mastering different aspects of PSM (Brandmeier & Rupp, 2010). For all these aspects to be taken into use there is a need for structured working methods and sustained process improvement in order to keep the development on the move. This is the reason why just one-off cost-cutting initiatives will not last, meaning that the capabilities must be developed to sustain the competitive advantage. Figure 11 illustrates this idea well. It has been recently emphasized in the literature that the focus should be in the skills of the people in purchasing, since relationships have an important role in purchasing (Dubois & Pedersen, 2002). In the successful partnerships and purchasing relationships it most often comes down to personal relationships and negotiation skills (Dubois & Pedersen, 2002). The capabilities of the purchasing personnel are important since the environment is constantly changing and therefore constant adjustments have to be made.

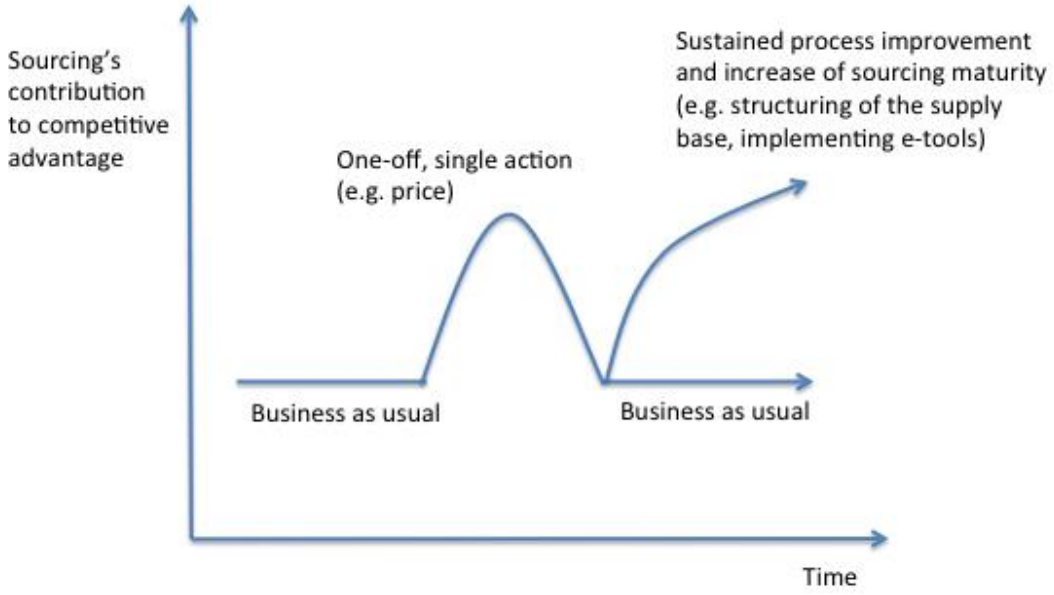


Figure 11: The basic idea of more structured and synchronized working method (Axelsson, Rozemeijer, & Wynstra, 2005)

2.3 Maturity models in purchasing and supply management

2.3.1 Maturity models in literature

Maturity means the level of development or growth. When something is mature, it is in a state where there is no further development ahead. A well-known example of a maturity model is the *product lifecycle model* (PLC-model) presented by William Cox Jr. (1967). It presents the life cycle of a product (hence the name) in four stages: Introduction, Growth, Maturity and Decline. This concept is widely used in marketing and product development literature. The model presents how the sales volumes increase (and decline), how the competition changes and how different product variants should occur. The model gives a perspective of what kind of challenges may appear during the product lifecycle, and has a predictive nature by showing what to expect during each stage. By understanding the conceptual model of the product lifecycle, marketing professionals can plan their product portfolio and focus their marketing efforts on the right consumers. By understanding the development and maturity models, we can prepare for the future and take actions in order to make it pleasant for ourselves.

Another well-known maturity model is the Quality Management Maturity Grid (QMMG) presented by Phillip Crosby (1979) in his top selling book, "Quality is free". The point of

this maturity model is somewhat similar to the Product lifecycle model; it provides understanding for the issue and promotes development actions. When the maturity grid is presented to the executives, they will understand the current stage and see the potential of the quality management work that could be done. The inspiration for the work towards this maturity grid came from the difficulty of selling the idea of quality management. During that time, everyone had some kind of prediction and understanding about quality, but no one really understood what kind of potential could lie in developing quality management. Crosby made the model simple and easy to use so that the need for long-range programs in quality could be deduced intellectually through the grid. The five stages of Crosby's model are: (1) Uncertainty, (2) Awakening, (3) Enlightenment, (4) Wisdom and (5) Certainity. In Table 3 the quality management maturity grid can be seen as it is presented in his book. For every stage and category there is a short description, which helps deciding the current stage, and provides better understanding on what quality is and should be. Crosby says in the book that the last stage of the model, "Certainity", is rarely achieved, but there are few companies that have been able to achieve that. Many things have happened since 1979 and today well-managed quality is mundane in most of the organisations.

Table 3: The Quality Management Maturity Grid by Phillip Crosby (1979)

Quality Management Maturity Grid (Crosby)	Assessor:			Department:	
Measurement Categories	**Stage 1: *Uncertainty***	**Stage 2: *Awakening***	**Stage 3: *Enlightenment***	**Stage 4: *Wisdom***	**Stage 5: *Certainty***
Management understanding and attitude	No comprehension of quality as a management tool. Tend to blame quality department for "quality problems".	Recognising that quality management may be of value but not willing to provide money or time to make it all happen.	While going through quality improvement programme learn more about quality management; becoming supportive and helpful.	Participating. Understand absolutes of quality management. Recognise their personal role in continuing emphasis.	Consider quality management as an essential part of company system.
Quality organisation status	Quality is hidden in manufacturing or engineering departments. Inspection probably not part of organisation. Emphasis on appraisal and sorting.	A stronger quality leader is appointed but main emphasis is still on appraisal and moving the product. Still part of manufacturing or other.	Quality department reports to top management, all appraisal is incorporated and manager has role in management of company.	Quality manager is an officer of company; effective status reporting and preventive action. Involved with customer affairs and special assignments.	Quality manager on board of directors. Prevention is main concern. Quality is a thought leader.
Problem handling	Problems are fought as they occur; no resolution; inadequate definition; lots of yelling and accusations.	Teams are set up to attack major problems. Long-range solutions are not solicited.	Corrective action communication established. Problems are faced openly and resolved in an orderly way.	Problems are identified early in their development. All functions are open to suggestion and improvement.	Except in the most unusual cases, problems are prevented.
Cost of quality as % of sales	Reported: Unknown Actual: 20%	Reported: 3% Actual: 18%	Reported: 8% Actual: 12%	Reported: 6.5% Actual: 8%	Reported: 2.5% Actual: 2.5%
Quality improvement actions	No organised activities. No understanding of such activities	Trying obvious "motivational" short-range efforts.	Implementation of a multi-step programme (e.g. Crosby's 14-step) with thorough understanding and establishment of each step.	Continuing the multi-step programme and starting other pro-active / preventive product quality initiatives.	Quality improvement is a normal and continued activity.
Summary of company quality posture	"We don't know why we have problems with quality".	"Is it absolutely necessary to always have problems with quality?"	"Through management commitment and quality improvement we are identifying and resolving our problems."	"Defect prevention is a routine part of our operation."	"We know why we do not have problems with quality."

As these examples presented, maturity models have the starting point describing the primitive level and the final stage describing the ideal and superb level of development. The number of stages varies through different models, but having four to six stages is the typical amount. It is also typical that models are divided into measurement categories, just like in the quality management maturity grid. Categories can also be at different stages; the overall stage of the company or the division is then decided using the average.

Maturity stages form a natural way of understanding the development, models are there to help understanding how the ideal path should or will be walked. These models are mostly more descriptive than exact, so interpreting them should not be taken too fundamentally (Crosby, 1979). Models are conceptual and the main purpose is to usually provide insight or to give benchmarking initiative (Brandmeier & Rupp, 2010).

Maturity models in business context are used in various disciplines, such as strategic analysis, production management, process management, software engineering (Paulk et al., 1993), innovation domain, quality management, marketing management, and so on. Standards are also in their way maturity models, with only two levels: qualifies or disqualifies the standard. For example in ISO 9000 quality system, company can even get a certificate from being in a certain level by authorized auditors. In operations context maturity models are described usually by being set of structured levels that describe how well behaviours, practices and processes can reliably produce required outputs and outcomes (Hammer, 2007).

Capability Maturity Model (CMM) is widely used in software development to rate programming subcontractor's processes and make sure their ways of working are at needed level (Paulk et al., 1993). The model was developed by the Software Engineering Institute at Carnegie Mellon University based on the findings of Phillips Crosby (the author of the book "Quality is free"). Levels used in CMM are: (1) The Initial level (2) The Repeatable Level (3) The Defined Level (4) The Managed Level and (5) The Optimizing Level. The levels presented in the model and the commercial success of this model has inspired other domains also to develop models for their needs, one example of this is the contract management maturity model (CMMM) presented by Rendon (2008). Just like purchasing or quality, contract management also needs to be developed and understanding the present stage is important aspect.

Capability Maturity Model (CMM) is related to purchasing because standardisation has made purchasing software programming easier from sources where business has not been done before (for example low cost countries), ISO certificates have this effect also. These certificates have been in the major role in developing many industries. This happens by having a commonly recognized measuring system, which increases the trust in the markets and gives some level guarantee towards supplier prospect. Standards and audit companies are then a whole different story, but they have also had their effect on increasing trust in the global markets.

2.3.2 Maturity models in purchasing and supply chain management

Purchasing maturity models are needed so that the level of purchasing functions could be observed and the development possibilities could be explicitly presented. As in other maturity models, there is a need to illustrate how purchasing function can develop and into what direction. Purchasing maturity models are answering the need for mapping the present state of the company, and give the context to the company of where the future development needs could be. As Schiele (2007) puts it: *"Maturity model describes auditable stages which an organization is expected to go through in its quest for greater sophistication.*" It is important to have the understanding on what the purchasing could be and how it could be improved. This is especially important for smaller companies and companies just starting to understand the underlying potential of external networks. Scanning for best practices and looking for successful competitors might help developing the function, but doesn't provide information about how these things should be actually made or what is good for the company at its developmental level. The level of purchasing varies between companies and so does the level of other operations as well; the optimal ways of operating are different for every individual company. It means that development needs are also different for every company. To quote the thoughts of Charles Darwin: it is not about being the fastest or strongest, it is about having the best fit for the environment (Cousins, Lawson, & Squire, 2006).

The increased pressures to reduce the costs and realization of the power of external resources have given more attention to purchasing (e.g. Outokumpu, likewise many other stock listed companies, is looking for reaching 25% savings in centralization of purchasing (Outokumpu, 2013)). There are many different aspects that can be developed within the purchasing domain. World-class processes wont fit to everyone,

so finding the right level of improvement targets is advisable. It is suggested that certain maturity levels are not even desirable for certain industries (Keough, 1993; van Weele, 2005). Some more advanced practices might be too bureaucratized or heavy, for industries like construction and financial services (van Weele, 2005). Using the maturity model as a basis for development helps companies to focus on the development of their own operations and to foresee the future developments. Using maturity models is similar to the process of benchmarking, it is basically so, but with deeper understanding about the dependencies.

Purchasing maturity model can also be called as a development model (Keough, 1993; van Weele, 2005), evolution model (Monczka et al., 2011) or progression model to the world-class level (Burt et al., 2003). Using a maturity model in the conceptual level is simple; just understand the current stage and then start to implement practices. One view to development is that firms should know where they are in relation where they want to be (Burt et al., 2003). The problem or opportunity with these models is that most of them are conceptual and their testing has not been done thoroughly (Schiele, 2007). However, there are few examples of studies where the link between the maturity level and performance has been found. Cousins et al. (2006) present in their study that there is an evolutionary process in purchasing development which has a statistical link to performance. Also, Paulraj et al. (2006), Schiele (2007) and Batenburg & Versendaal (2008) have found that the higher level of maturity has positive impact on performance. Actually, these findings are basically common sense: if company has good processes and operating methods they should be performing better than companies with primitive ways of working. It has to be noted that purchasing maturity level is not the only thing affecting on company's performance, the whole company should be analysed thoroughly to find the "real causes". This makes measuring the purchasing performance difficult, since everything has an effect on everything; management paradigm called theory of constraints discusses and studies this issue in more detail. Purchasing performance measurements are handled later in chapter 2.4.1.

2.3.3 The strategic stages in the development of purchasing function by Reck and Long (1988)

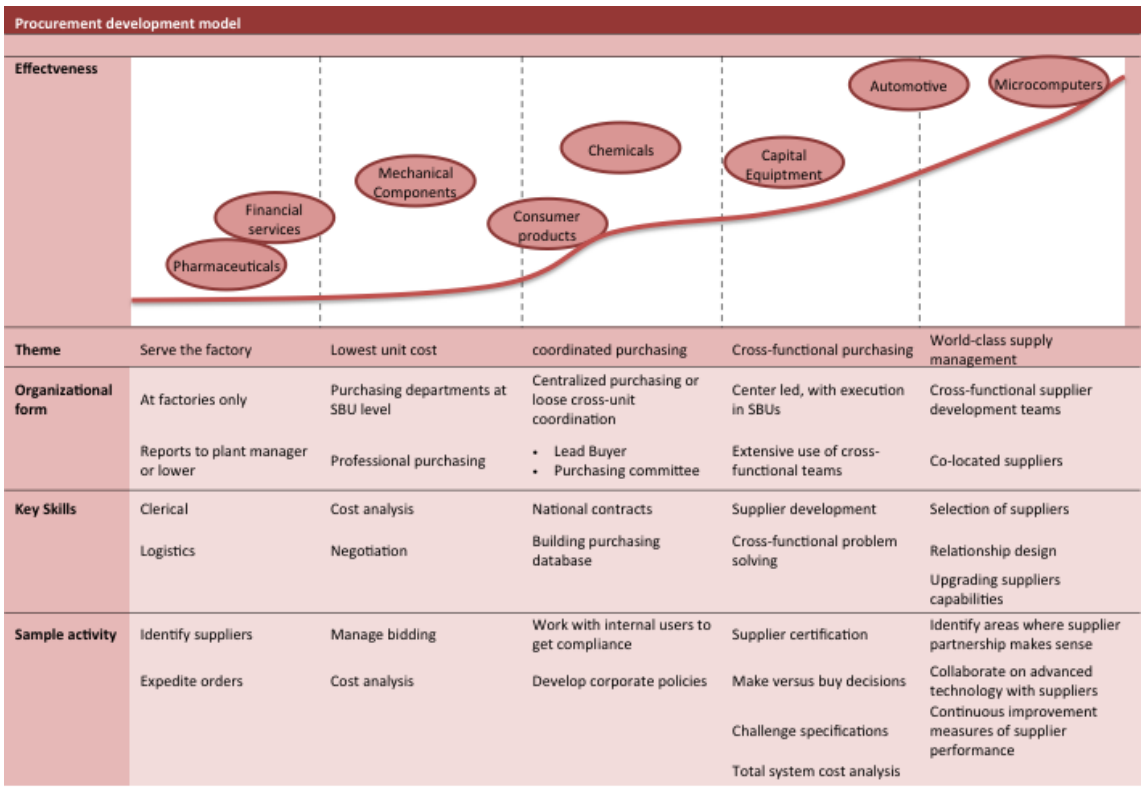
First maturity model that is recognized to fit PSM domain was Reck & Long's (1988): "Strategic stages in the development of a purchasing function" (Axelsson et al., 2005;

Rozemeijer, 2000; Schiele, 2007; van Weele, Rozemeijer, & Rietveld, 1998). In the article, they describe how purchasing develops from passive to integrative in four stages. The model was based on interviews, and it focuses on proving that purchasing can have serious impact on competitive strategy ("competitive weapon" as the article heading states). Briefly described, the stages in the model are: (1) **Passive**: purchasing handles orders, reacts on internal orders, and reports to the factory; (2) **Independent**: developed function, some operations automatized, actively looking for new suppliers, costs and value are analysed but the main focus is on efficiency; (3) **Supportive**: function supports finding competitive advantage, purchasing is involved in product development and important part of the company, total-cost-of-ownership (TCO) view, reports to management and communicates with all the functions; (4) **Integrative**: purchasing is highly responsible for competitive success, a holistic view about how functions affect on each other and other functions also understand the meaning of purchasing, integral part of firms competitive strategy. Within the company, different people have different ways of working, and some people might be executing tasks in the way expected in the higher or lower maturity level, this notation comes again to the fact that the model is descriptive, not exact. Common to this and other models is that the development process is evolutionary, not revolutionary. Changes take time and developments to the higher stage are happening gradually. Jumping over one stage is not possible or it doesn't happen without difficulties. Reck & Long (1988) states that basic things need to be in order before company can move to the next stage. This advice is extremely valid for other maturity models and for business development in general.

2.3.4 The procurement development model of Keough (1993)

Inspired of the work of Reck and Long, in 1993 Mark Keough published an article called "Buying your way to the top" at the Harvard Business Review. At the time, purchasing wasn't widely seen as a potential source of competitive advantage, even though there had been a lot of articles about the importance of the external networks (Forrester, 1958; Kraljic, 1983; Reck & Long, 1988). In the article Keough (1993) describes why and how purchasing function should be developed and uses the maturity model (procurement development model in Figure 12) to illustrate the levels of strategic purchasing in the different organisations. The model and the article are based on an extensive interview of more than 150 organisations around the world. Keough (1993)

has constructed its maturity model based on Reck and Long's work, but he added stages and dimensions to the model. He also made clear that all the companies and industries do not have to aim for the highest level of maturity and named industries that are typically representing the different stages in his model (see Figure 12 for details). According to the model financial services are doomed to be in the "serve the factory" stage and automotive industry is getting closer to "world-class supply management". Like Cousins et al. (2006) noted in their article, these models have Darwinian 'survival of the fittest' perspective: it doesn't mean that the strongest, or largest is the best form of organisation, it simply means the best fit for environment. For example small companies might be better off with simple ways of operating and in simple industry fancy tricks are not needed. To achieve more strategic practices in purchasing, Keough (1993) proposes four barriers to overcome before a company can truly have strategic purchasing organisation. These barriers are: (1) Get the basics right, (2) Put money on the table, (3) Develop supporting organisational infrastructure and (4) Build world-class suppliers. By using these "simple" guidelines, organisations can start "buying themselves to the top". Keough (1993) is the only author that has been brave enough to promise savings from moving from stage to another. He suggests that in his maturity model the savings achieved would be about 5% to 10% for every step.



Theme	Serve the factory	Lowest unit cost	coordinated purchasing	Cross-functional purchasing	World-class supply management
Organizational form	At factories only	Purchasing departments at SBU level	Centralized purchasing or loose cross-unit coordination	Center led, with execution in SBUs	Cross-functional supplier development teams
	Reports to plant manager or lower	Professional purchasing	• Lead Buyer • Purchasing committee	Extensive use of cross-functional teams	Co-located suppliers
Key Skills	Clerical	Cost analysis	National contracts	Supplier development	Selection of suppliers
	Logistics	Negotiation	Building purchasing database	Cross-functional problem solving	Relationship design
					Upgrading suppliers capabilities
Sample activity	Identify suppliers	Manage bidding	Work with internal users to get compliance	Supplier certification	Identify areas where supplier partnership makes sense
	Expedite orders	Cost analysis	Develop corporate policies	Make versus buy decisions	Collaborate on advanced technology with suppliers
				Challenge specifications	Continuous improvement measures of supplier performance
				Total system cost analysis	

Figure 12: Procurement development model presented by Keough (1993)

2.3.5 The maturity model of Van Weele (1998)

The maturity model presented by Van Weele et al. in 1998 (Figure 13) combines all the models presented before into one model. The model leans heavily on the one presented by Keough (1993, Figure 12), but it has some updates to the model: organisational structures, focus, the views of different industries and one more stage (now there is six instead of five). The model captures important aspects of purchasing development and how the corporations will find the better ways of organising themselves (decentralised vs. centralised and functional vs. cross-functional focus) as can be seen from the arrows between the stages. In this model automotive industry is in the last phase and pharmaceuticals (Pharma) is in the middle of the maturity continuum, compared with Keough's (1993) model where they are both lower in the stages (see Figure 12). This model has then been widely referred to in the PSM domain since its publication in 1998 and it has been updated several times, in the textbooks of the author[3].

[3] The same model has then been published in the book: "Purchasing & supply chain management: analysis, strategy, planning and practice" (editions 1 to 5) by the same author, which is a widely used text book in universities

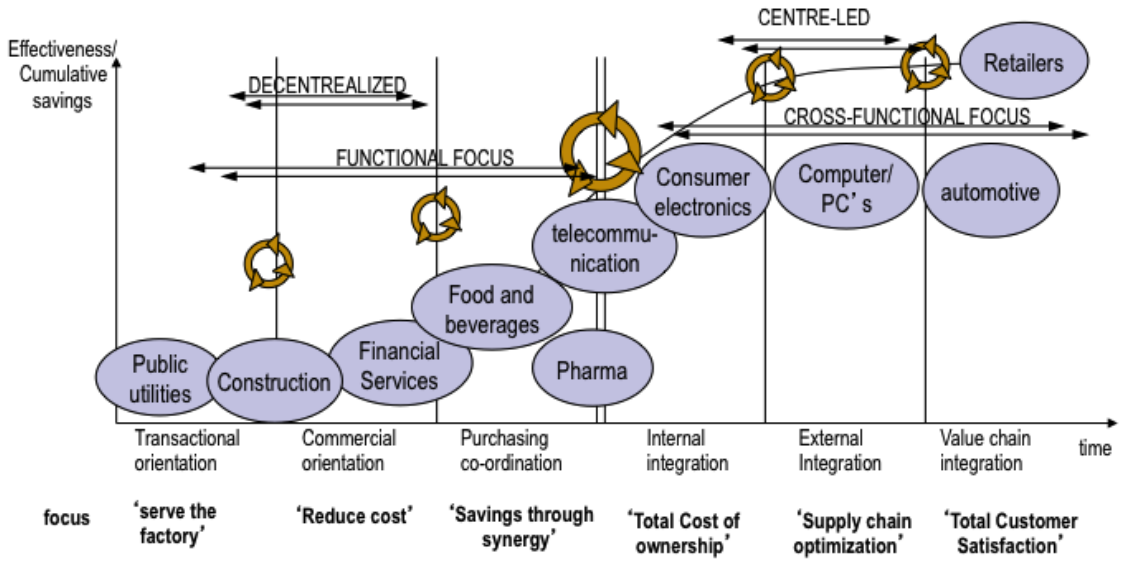


Figure 13: Purchasing and supply management maturity model presented by Van Weele (1998)

2.3.6 Summary of the PSM maturity models in the literature

In Table 4 all purchasing maturity models found in the literature have been collected into one table. As can be seen on the table, after Reck and Long's (1988) model there have been many iterations. The most influential of these models are Reck and Long (1988), Keough (1993) and Van Weele et al.'s (1998) versions, those are widely cited and usually mentioned in the literature about purchasing maturity and development. The latest models presented are more or less modifications of the older models. Some new insights come from the work of Cousins et al. (2006), : "Celebrity", which has the maturity levels imbalance in different dimensions. Paulraj et al. (2006) and Schiele (2007) neither used any maturity model as a base for their model, instead they used a questionnaire survey to find out what kinds of levels it is possible to find. For this reason, these maturity stages have been described with percentages.

Table 4: Purchasing maturity/development models (modified from Van Weele et al., 1998)

Author	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Reck and Long (1988)	Passive	Independent	Supportive	Integrative		
Syson (1989)	Clerical (transactional)	Commercial	Strategic (proactive focus)			
Bhote (1989)	Confrontation	Arms length	Goal congruence	Full Partnership		
Cavinato (1990)	Buying (at low prices)	Purchasing	Procurement	Supply acquisition	Facilitate networks	
Cammish and Keough (1991)	Serve the factory	Lowest unit cost	Co-ordinated purchasing	Strategic procurement		
Van Weele (1992)	Operational / administrative orientation	Commercial orientation	Logistic orientation	Strategic orientation		
Burt (1993)	Reactive	Mechanical	Pro-active	Strategic supply management		
Keough (1993)	Serve the factory	Lowest unit cost	Co-ordinated purchasing	Cross functional purchasing	World class supply management	
AT Kearney (1994)	Transaction	Control	Functional excellence	Integration		
Monczka (1994)	Manufacturing support	Price buying	Consolidation	Integrated strategic sourcing and SCM		
Chadwick (1995)	Clerical	Commercial	Supportive	Strategic		
Barry and Cavinato (1996)	Basic MRO purchasing processes	Enhanced MRO procurement practices	World-class MRO procurement practices			
Van Weele (1998)	Transaction orientation	Commercial orientation	Purchasing coordination	Process orientation	Supply chain orientation	Value chain orientation
Burt et al. (2003)	Clerical	Mechanical	Pro-active	World Class		
Monczka (2004)	Basic beginnings	Moderate development	Limited integration	Fully integrated supply chains		
Paulraj et al. (2006)*	(0- 25%) Nascent	(25-75%) tactical	(75-100%) strategic			
Cousins et al. (2006)	Undeveloped	Capable	Strategic		Celebrity**	
Schiele (2007)*	0-25%	25-50%	50-75%	75-100%		
KPMG (2012)	Foundation	Established	Leading	Excellence		

*** = Stages are not named, only divided statistically and described in words**

**** = This stage doesnt follow the evolutionary process**

2.4 Measuring the maturity stage of a purchasing function

There are many different maturity models presented in the literature (See the previous chapter), most of which are conceptual by nature and built from the models presented earlier. All these models use a stage approach in which there are different amount of stages that companies go through during their development. When companies seek advantage from understanding the maturity models, the challenge of measuring the present maturity stage emerges. Knowing the operations can help perceiving the current stage of maturity, but getting the objective measurement is significantly harder. Even if there are multiple maturity models presented in the literature, there have not

been so many articles about the measuring of the maturity stages. The reason for this is most probably the vague definition of purchasing and its changing nature: there are constantly new trends and approaches being applied in the field of purchasing and supply management (e-procurement in the 1980s, TCO in the 1990s, partnerships in the 1990s, global sourcing in the 2000s etc.). This makes defining the final stage difficult, since that stage should always use the latest methodology of purchasing that might not even be desirable for all the industries. Another matter making the definition of maturity difficult is that things affecting the purchasing maturity are not always dependent on each other. Purchasing organisation can be for example "famous and recognised" in the organisation, without having skills and knowledge that would lift it to higher maturity stages, as was found in the study of Cousins et al. (2006). Abilities and capabilities will not develop at the same time, so rarely organisation is fully in one maturity stage. Depending on the study, purchasing maturity has been divided into dimensions (Batenburg & Versendaal, 2008; Schiele, 2007), practices (Kerkfeld & Hartmann, 2010) or properties (Paulraj et al., 2006). In this thesis, dimension is the term used. The different ways to measure maturity and dimensions will be presented next.

2.4.1 The link between maturity stage and performance

How do you measure the performance of the purchasing function? As it has been mentioned before, purchasing performance is difficult to measure since purchasing has so many dependencies with other functions. It is difficult but it is not impossible. Well-prepared metrics is important part of controlling purchasing function as well as realizing the influence that purchasing personnel is doing for the whole business. Performance measures can also be described in different stages. The way organisations measure their purchasing performance illustrates the sophistication of the function (van Weele, 2005). In Table 5 below there are different kinds of purchasing measures and their relations to the view on purchasing, the hierarchical position and the focus. The table shows that purchasing focus should be in effectiveness and not just efficiency. Effectiveness means holistic support and integration to other functions, which emphasizes that purchasing should not be optimizing itself but rather working together seamlessly to produce customer satisfaction.

Table 5: How management may look at purchasing (van Weele, 2005)

Alternative viewpoints	Hierarchical position of purchasing	Performance measures	Focus
Operational and administrative function	Low in organization	Number of orders, order backlog, purchasing administration lead time, authorization, procedures, etc.	Efficiency
Commercial activity	Reporting to management	Savings, price reduction, ROI-measures, inflation reports, variance reports	Efficiency
Part of integrated logistics management	Integrated with other materials- related functions	Savings, cost-reduction, supplier delivery reliability, reject-rates, lead time reduction	Efficiency
Strategic business function	Represented in top management	'Should cost' analysis, early supplier involvement, make-or-buy, supply base reduction	Effectiveness

There are different metrics companies can adopt and which can help the management to review performance in relation to the historical data. This means metrics that can indicate if the performance has improved or worsened (for more about purchasing measurements see Axelsson et al. (2005) Chapter 9). There is no indicator that could be objectively used to measure the performance of purchasing in relation to other companies and compare which company has the best performance in purchasing. For this reason Schiele (2007) uses a "lever analysis" in his study to analyse the purchasing functions ability to find cost savings potential. In a lever analysis, a group of cross-functional members will estimate the savings potentials for each lever. The traditional form of lever analysis considers six sourcing levers: pooling, price evaluation, global sourcing, product optimisation, process improvement and supply relationship (Schiele, 2007). Relative ability to find cost savings potential was then interpreted by Schiele (2007) to be substitute for purchasing performance. There are also other studies where that link has been studied and those are described briefly in the next chapters.

Studies of Rozemeijer

The Doctoral thesis of Frank Rozemeijer (2000) was the first study measuring the maturity stage of purchasing organisations. In his thesis, Rozemeijer was looking for corporate advantage in purchasing[4]. In the first group of case studies, he looks at five

[4] The title of the PhD Thesis is "Creating corporate advantage in purchasing"

companies through five dimensions: Business context, Strategic focus, Organisational context, Purchasing maturity and Purchasing synergy; and how these things affect on the performance of the company. He studies the maturity of the companies through three dimensions: status, orientation and purchasing quote. As a base for evaluating the maturity level the development model of Van Weele (see Figure 13) is used in the study. In the second case study of the thesis, he makes observations of purchasing maturity through five different dimensions: *ambition, purchasing strategy, organisational form, information systems and culture*, and finds out that the case company "…can be placed in the first stages of the purchasing development model" (Rozemeijer, 2000, p.146). It seems from the results that determining the actual stage of the company is difficult; the author can only state where the company is *about* in the stage structure. As a conclusion of using these different approaches to measure maturity, he presents a questionnaire with ten questions that can be used to measure the level of maturity (see Table 6). The level of exactness here is pretty low; it provides the perception of the level, not the exact stage of maturity. Important is that Rozemeijer finds out that companies with higher maturity will use more and more advanced measures to create corporate advantage in purchasing than with low purchasing maturity (Rozemeijer, 2000). This gives proof for the obvious statement that purchasing can provide corporate advantage.

Table 6: Questionnaire to measure purchasing maturity (Rozemeijer, 2000)

Nro	Question:
1	The purchasing spend with outside parties is high and increasing.
2	Top management recognises Purchasing as an important contributor to the competitive position
3	In our company the purchasing function reports directly to top management.
4	In our company purchasing relates to strategic and truly cross-functional processes, with high involvement of line management.
5	In our company, purchasing's main goal is achieving the lowest total cost against highest value.
6	In our company there is a high degree of homogeneity in purchasing needs across the BU's.
7	There are no significant differences in the role and position of the different purchasing departments across the BU's of our company.
8	The skills and capabilities of purchasing personnel in the different BU's are more than adequate for participating in formulating corporate purchasing strategies.
9	The purchasing departments in the different BU's operate on comparable levels of professionalism.
10	The skills and capabilities on the corporate level are adequate for managing corporate purchasing synergy.

The levels of strategic purchasing by Paulraj et al. (2006)

Paulraj et al. (2006) is measuring maturity in terms of strategic level of purchasing; he divides that into three dimensions: Strategic focus, strategic involvement and visibility. The main idea of the study is to find out what kind of impact strategic purchasing has on the supply integration and performance of the company. The study has been made in the United States and the data is gathered using a questionnaire survey with questions using scale from 1 to 7. 232 answers in total were analysed. In the same survey there were questions about the strategic level, supply integration and performance, and correlations between these domains were then looked through the perspective of strategic purchasing. From the survey data, the authors found out that the strategic purchasing can be divided into three stages. These stages are: (1) **Nascent:** no long-term focus, passive role and "riddled with cost-based priorities"; (2) **More advanced:** actively involved in the strategic planning process and trained in the elements of competitive strategy, but no long-term proactive actions made, and (3) **Evolved and advanced in the strategic nature of purchasing**: purchasing strategy linked directly to company's long-term goals; affects on quality, cost/price, reliable delivery and cycle time reduction, and is integrating supply base strategically. The study proves scientifically the same thing that has been stated before; that higher level of strategic purchasing has actual benefit for the company and profound impact on supply chain performance subsequently creates a win–win situation for both buyer and supplier firms. According to this study, firms should increase their purchasing strategic focus, involvement and visibility in the company to achieve better performance. (Paulraj et al., 2006)

Cousins, Lawson and Squire (2006) searching for empirical taxonomy

The article by Cousins, Lawson and Squire (2006) is looking for "An empirical taxonomy of purchasing functions" (Cousins et al., 2006). The hypothesis they propose is that "Purchasing functions within organisations can be classified based on their *level of involvement in strategic planning*, *status in the eyes of top management*, the *degree of internal integration*, and *purchasing skills*". In other words that can be interpreted as meaning the maturity level of purchasing. These four characteristics (Strategic planning, purchasing status, internal integration and purchasing skills) were then measured in 151 companies in United Kingdom and compared with performance results obtained in the same questionnaire. The performance here was measured in terms of four dimensions:

supplier relationship outcomes, financial- and production performance and supplier integration. As a result, Cousins et al. (2006) found that it was possible to classify the different purchasing functions using cluster analysis. They found out four configurations: three developmental and one "wild card". These are: (1) **Undeveloped:** nascent, skills in a good level but internal integration and visibility is low, not yet fully utilized; (2) **Capable**: This level the skills are really high but other things are at a modest level; (3) **Strategic**: reflective and mature purchasing function, heavily involved in planning activities and strategic decisions; (4) **Celebrity:** this stage is the wild card that did not fit the developmental process (26% of the companies). In this stage, the function has the high level of status and recognition but low level of knowledge and skills. Purchasing people are working mostly in operational issues; the author describes this as being an "emperor without clothes". This study provides evidence that strategic purchasing has important effect on competitive advantage. The cluster analysis could be criticised from the way the segmentation was done: only 74% of the companies were able to be placed on the maturity profiles while the others were just placed in this extra class (Celebrity). Cluster analysis in general can be criticised from the same thing, that it creates taxonomies that are non-existing in the real world.

Supply-management maturity audit by Schiele (2007)

Holger Schiele published an article in 2007 called "Supply-management maturity, costs savings and purchasing absorptive capacity: Testing the procurement-performance link", it was searching for the same missing link that the authors described above tried to prove: link between maturity and performance. He motivates the usage of maturity profiles, because they are easily communicable and showing the way to immediate actions for improvement. In his article Schiele (2007) took 14 companies from the industry of metal parts production in Germany and analysed their maturity and ability to find cost savings. The study was made by having multiple interviews per company (in total approximately 350 hours of interviews) and workshops to attain the high reliability of the study. In this study the maturity is divided to five different dimensions, which are: *planning, structural organisation, process organisation, human resources* and *controlling*. The underlying principle in these classifications is that a highly developed purchasing organisation does not depend on individual performance, but is sufficiently structured to perform well despite personnel turnover.

The study was made by interviewing the people working in the supply-management (purchasing) departments. Multiple questions were used for each dimension. All questions were then scored from 0% to 100% according how well they applied that specific ability of maturity (in total there were 56 questions). In the interviewing template there was sample answers for four different levels, just like in the Quality Management Maturity Grid (Table 3) by Crosby (1979) that presented earlier to help scoring the interviews objectively. Results were good in terms of purchasing maturity studies. It was found that even though more mature purchasing functions had basically less savings potential than the companies with lower maturity, companies with higher maturity were able to recognise more significant savings. Schiele introduces in his article a new term "minimum maturity point", which means that development actions should be considered based on the maturity level of an organisation (see Figure 14). The higher the maturity, the better the effect on improvements will have (Schiele, 2007).

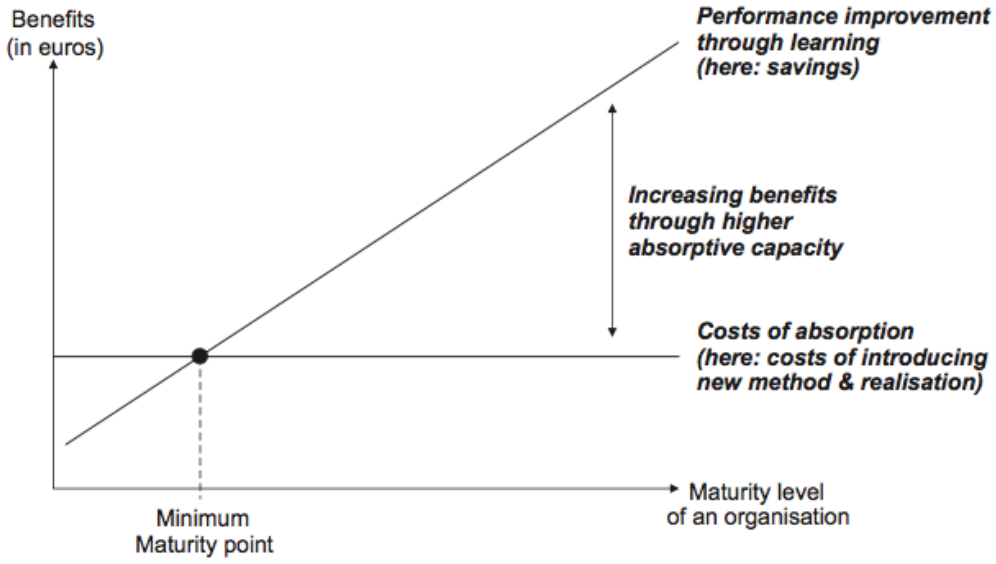


Figure 14: The minimum maturity point (Schiele, 2007)

Maturity matters for Batenburg and Versendaal (2008)

In their article "Maturity matters: Performance determinants of the procurement business function", Batenburg & Versendaal (2008) proves that purchasing (called procurement in this article) maturity has positive effect on firms performance. They use the maturity model presented by Van Weele (Figure 13) with five stages, divided into five dimensions: *goals and strategy, control, organisation, process, information and e-technology*. Using these dimensions as a base for the questions, the survey was then

conducted to 117 Dutch organisations, each with 2-hour interview. The research model of the study is presented in Figure 15, where the research question is also visible: "How maturity and procurement alignment affect on performance". The results here were similar to other studies: maturity and performance has a link, as the heading of the article says: "maturity matters".

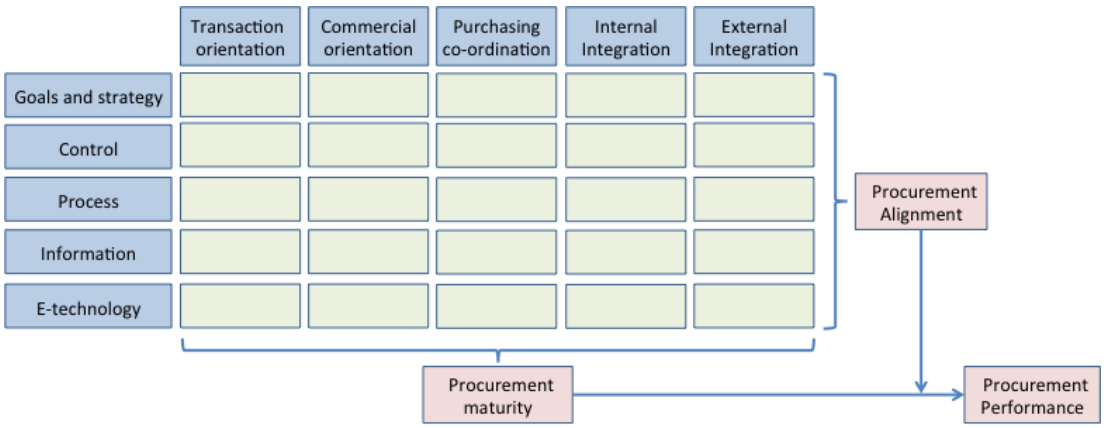


Figure 15: The reseach model of the maturity study by Batenburg and Versendaal (2008)

Context-Dependency of PSM by Kerkfeld & Hartmann (2010)

The latest study found on purchasing maturity measurement is written by Kerkfeld & Hartmann (2010), who made phone interviews for 306 manufacturing and service companies in US. In the study, they were looking for the link between purchasing maturity and business profitability. The maturity was divided into four strategic practices: *supplier management, performance management, talent management, and cross-functional integration.* Business profitability was divided into three different constructs that were recognised to be the main operational benefits. These benefits could be achieved through superior purchasing maturity, namely through cost, quality and innovation. Findings from the study were that higher purchasing maturity had a significant direct effect on all these operational performance constructs (cost, quality and innovation). The strongest link was with cost reduction and lowest with innovation. Anyway there wasn't a direct link found between maturity and business profitability, rather the link was found to be indirect through these operational performance measures (Kerkfeld & Hartmann, 2010).

2.4.2 Conclusions about the measurement practices

The most comprehensive of all these studies about purchasing maturity and performance is the one presented by Schiele (2007). When looked in more detail, all these models have the same subjects handled. Dimensions might have different names, but all of them can be found in the five-dimension model of Schiele (2007). Table 7 demonstrates how these dimensions presented by other authors can be found inside Schiele's dimensions: Planning; Organisational structure; Processes; Human resources and leadership and Controlling. The number in brackets after the dimension describes the author that suggested that dimension.

Table 7: Measurements of purchasing maturity by Schiele compared with measures presented by other authors

Purchasing maturity Profile dimensions by Schiele (2007)	Dimensions presented by other authors
Procurement planning	Goals and strategy (4)
Organisational Structure	Ambition (1), Purchasing strategy (1), Organisational form (1), Strategic involvement (2), Visibility/Status (2), Strategic planning (3), Purchasing status (3), Organisation (4)
Process organisation	Strategic focus (2), internal integration (3), Process (4), Supplier management (5), Performance management (5), Cross-functional integration (5)
Human resources and leadership	Culture (1), Purchasing skills (3), Talent management (5)
Purchasing controlling	Information systems (1), Control (4), Information (4), E-technology (4), Performance management (5)
Explanations: 1=(Rozemeijer, 2000), 2=(Paulraj et al., 2006), 3=(Cousins et al., 2006), 4=(Batenburg & Versendaal, 2008), 5=(Kerkfeld & Hartmann, 2010)	

The model of Schiele is tested several hundred times in several companies and adjusted to get all the necessary information related to purchasing maturity (Schiele, 2007). Only thing missing is that it has only been used for companies operating in the same kind of industry (medium- to large-sized producers of metal parts with 1000 to 2000

employees). As the author says in the end of the article: *"To the best of our knowledge, this is the most extensive purchasing maturity profile application ever reported."* This builds confidence that the maturity assessment is at the good level (*the Journal of Purchasing and Supply Management* has good standards).

3 Measuring the maturity stage in Finnish companies with interviews

The reasons why the interview structure of Schiele (2007) was used in this study as the main interview framework were already mentioned in the previous chapter. The reasons were the thoroughness and usability of Schiele's framework. The questionnaire has over 50 questions and it has been tested several times to ensure the functionality. The questionnaire has detailed model answers (four choices) for every question, which helps quantifying the results considerably and makes it more usable. The full questionnaire used in the study can be found in Appendix 1. To make sure that the data received from the interviews was good enough, two other purchasing maturity tests were used in addition. This triangulation of different methods allowed comparing the usability and applicability of different tests in the case interviews. These two other tests were: Rozemeijer's questionnaire (see Table 6 and Rozemeijer, 2000) to measure purchasing maturity and Keough's purchasing development model (see Figure 12 and Keough, 1993).

Rozemeijer's questionnaire has 10 questions and the answers are only allowed to be either yes or no. The idea is that the more "yes" answers you get the higher the maturity stage the company is in. This model is made for quick analysis for the companies themselves, so that they could use the Rozemeijer's-matrix (presented in Figure 9) for deciding the best organisational approach for their company (Rozemeijer, 2000). The questions were translated and asked in the interviews after the first questionnaire (Schiele's).

With Keough's model, the interviewee was asked to estimate from the maturity model where he would position his company in the maturity continuum (see Figure 12). The model of Keough (1993) is a good illustration of a maturity model with clear bullet points about the abilities of the function. It was a simple task for the interviewee and could be conducted quickly. This method of estimating the maturity stage was the only way to recognise the maturity level before there were any maturity audits published. The reason for choosing that model apart from all other visual maturity models was that there have not been many major changes to that model in the subsequent models. This task was given after two questionnaires, so that the interviewee would not be biased

for answering questions in order to get scores that would give the company the higher level of maturity than they actually had.

Using these three methods, there were enough answers to understand the state of the purchasing and the perceived maturity level of a particular purchasing organisation. Figure 16 presents the order and the methods used in the interview and the visual conclusion made about the results received.

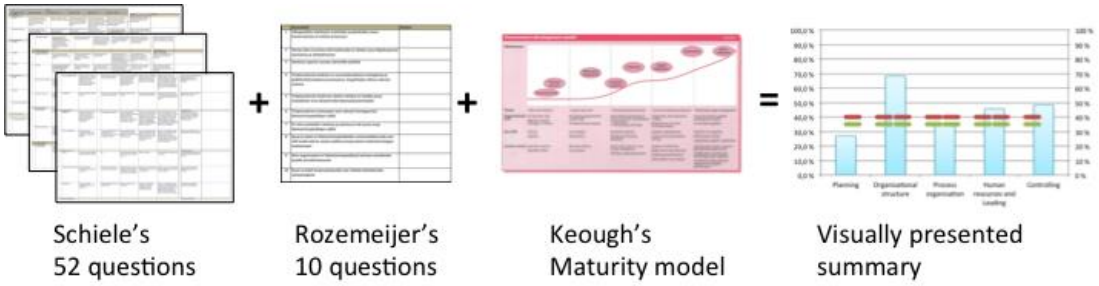


Figure 16: Interview structure and process

3.1 About the interview structure

The questionnaire made by Schiele (2007) is used in the study. There are five dimensions and each dimension is divided into sub-dimensions or themes. Each theme has its own questions, which then specifies the theme. Before the same questionnaire was possible to use in Finnish context, some minor adjustments were made during the translation. The original model has 56 questions; the themes and the structure of the survey are presented in Table 8 below. Each question has four model answers, which are 0 – 24%, 25 – 49%, 50 – 74% and 75 – 100%. 100% means that the company is at the highest possible level and 0% means there is still work to do. The full questionnaire used in the interviews is in Appendix 1. The scoring of the answers is done in the transcription phase based on the answers of the interviewee and the model answers. The exact method of analysing the interviews is described in Chapter 3.3.

Table 8: Schiele's questionnaire structure

Dimensions	Sub-dimensions
Planning	Demand planning
	Pooling planning
	Environment Scan
	Innovation planning
Organisational structure	Structure & Mandates
	Strategic integration
Process organization	Sourcing strategy
	Supplier selection
	Supplier Evaluation
	Supplier development
	Purchasing early involvement in development processes
	Early Supplier Involvement process
	Process involvement with other functions
Human resources and Leading	Job descriptions and competencies
	Personnel selection and integration
	Performance appraisal & career development
Controlling	Controlling system
	Controlling process & structure
	Controlling methods and tools

Before starting the interviews, the questionnaire was tested with a researcher colleague, who answered the questions based on his experience while working in the sourcing organisation of a Finnish Shipyard.

3.2 Test Interview and findings

During the test interview all the questions were asked from the questionnaire of Schiele (2007). The results and the feedback were then used to adjust the questionnaire and the translations. There were some questions that were irrelevant to the project industry that shipbuilding represents, but those were then either skipped or adjusted to fit that industry.

Using this triangulation of methods in order to examine the maturity stage was seen as a good way to get three different views from one interviewee, as can be seen from Figure 17 illustrating the results in a visual format (more about the analysis in the next

chapter). The results were quite similar in stage-wisely, but the figure illustrates that there is variation between dimensions, which means that measuring maturity only in one dimension would just be a compromise that lacks important aspects. After comparing the results of all the interviews this can be proven, but after the first interview it seems that these different maturity tests are in good coherence (see Figure 17).

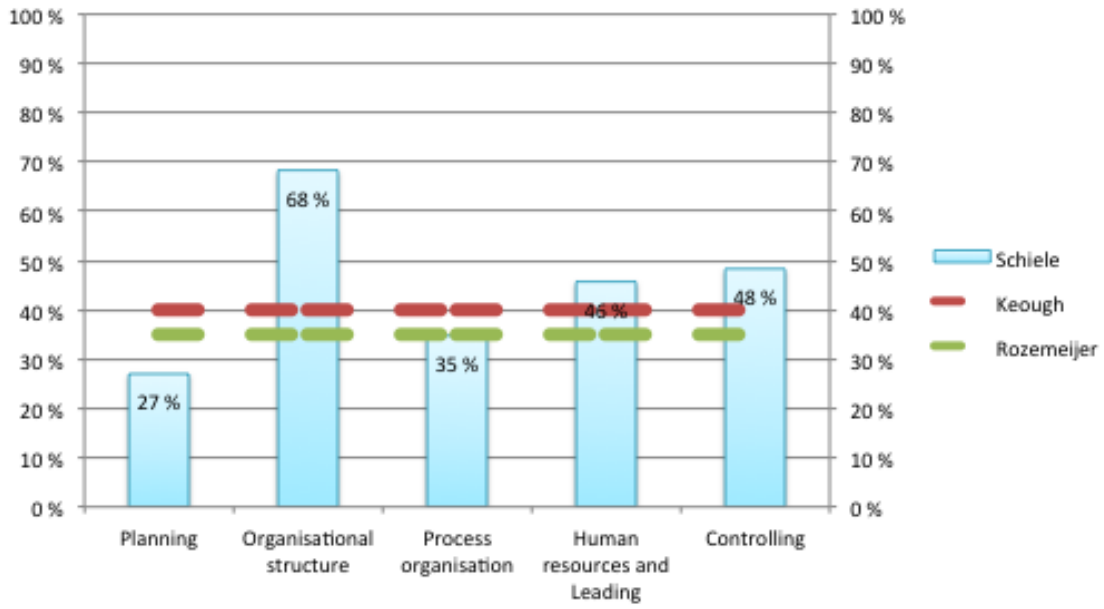


Figure 17: Test interview results of the current maturity stage of a shipyard (Interview of researcher colleague)

The good thing about the models is that the results can be visually demonstrated (Figure 17), and the dimensions with room for improvement can be seen easily from the figure (the methodology for this analysis is described in the next chapter). This is a good way to see if there are similarities or differences between different companies. The test interview indicated that the structure used was good for the interviews. For that reason all the other interviews were decided to do with this same methodology.

3.3 Methods for analysing the data

Each case was analysed individually and then the findings were combined and gathered into final discussion and conclusions. All interviews have been recorded and based on the recordings and the interview notes were transcribed in detail. Each question of the questionnaire was analysed individually and the answer was transcribed to the questionnaire structure. The answer was then compared with four model answers in

Schiele's model and the one closest to the actual answer was then chosen. The percentage for the question was estimated based on that and fine-tuned to match the perceived maturity level for that specific question. The process has been described in Figure 18, with illustrations from the questionnaire form.

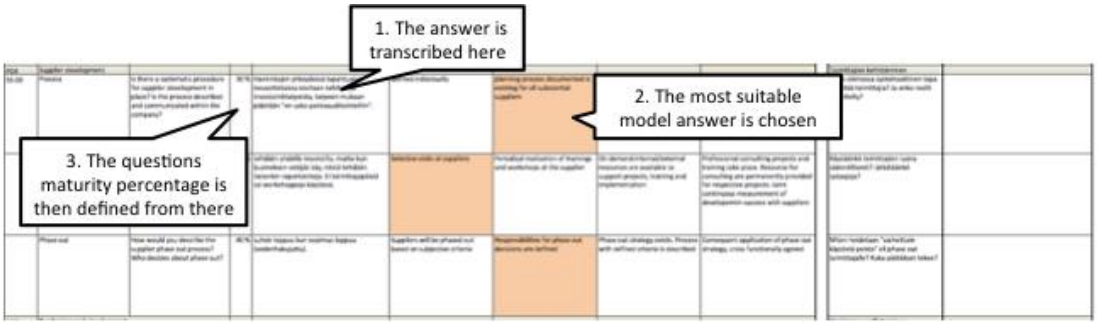


Figure 18: the process of analysing the interview questions. Illustrative picture of analysing the results (Schiele's model)

After all questions were analysed individually, the averages for each sub-dimension and dimension were calculated from the individual questions in that group. These averages were then used to draw the five-dimension maturity profile that is presented in Figure 17. This illustration of the results makes the cross-case analysis more visual and understandable. Questions and themes are also analysed individually and companies are compared in relevantly seen areas and themes.

The questionnaire of Rozemeijer is analysed by the percentage of "yes"-answers in ten questions; if all the answers were "yes", the maturity would be 100% and vice versa. The estimation of the maturity level in Keough's purchasing development model is converted into percentages so that each phase represents 20% increase in the maturity level, the scale and the illustration of the model can be seen in Figure 19 below. The maturity percentages from Rozemeijer's and Keough's model are presented as straight lines in the same figure as Schiele's results, see Figure 17.

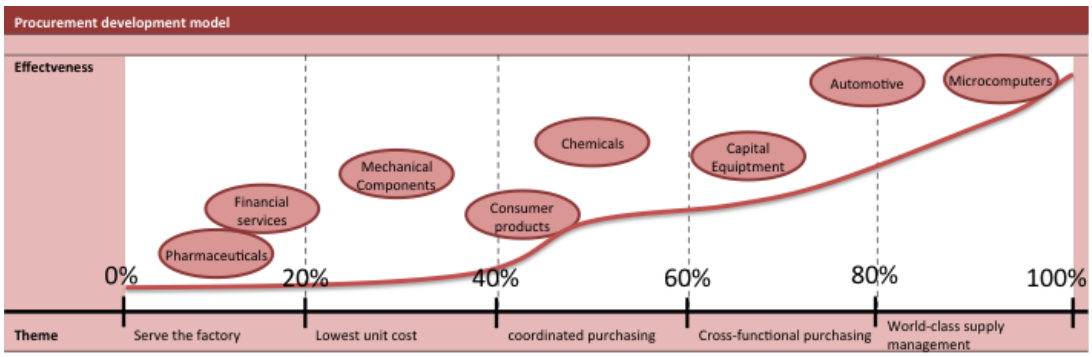


Figure 19: Illustration of the codifying the results from Keough's maturity model, see the whole model in Figure 12.

There are descriptions of cases and people interviewed to provide background information about the companies. Every interview is analysed individually by short descriptions about the findings from the dimensions. The interview reports have been sent to interviewees for verifying round, so that misconceptions are removed from the text.

4 In search of purchasing maturity

4.1 About the study - cases and companies

The study was made to understand different purchasing organisations and how these companies perform their purchases. The purchasing maturity tests were conducted to find out the applicability of the models in practice and to find out if it is possible to identify the maturity stage of the company and use the results to develop the function into the more mature direction.

In order to get as wide and divergent view of the different ways of managing purchasing, companies from different industries and operating ways were chosen. The companies represent governmental organisations, factories, high-tech and construction industry. The common theme is that all of them are working more or less in a project environment; the business for the companies comes from projects that are done with customers. The hypothesis is that different maturity levels and profiles can be found among this sample. The case companies have been presented in Table 9 below. There were five companies interviewed, in total nine interviews producing 14 hours and 50 minutes of interview material. The test interview also presents one company, but it is not fully valid since the interviewee has not worked for that company for several years.

Table 9: Case companies and brief descriptions (numbers are rounded to ensure anonymousness)[5]

Name	Description	Employees in Finland (globally)
The City	The organisation behind a large city in Finland	>10 000
The Metal processor	Producing high-end metal products for mostly industrial use worldwide	500 (6 000)
The Healthcare manufacturer	Designing and producing healthcare devices globally	800 (50 000)
The Infra company	Company doing infra-construction works in Finland	>1 500
The Construction company	Small growing construction company working with innovative ways	120

[5] Figures are received from the annual reports and Orbis-database (https://orbis.bvdinfo.com/)

Each case will be introduced and the interviews analysed individually. Interviews per company will then be combined and analysed together. Suggestions will be provided for each case. Table 10 presents all the interviews carried out in this research.

Table 10: The interviews conducted in the study: companies, titles and duration

Company	Interviewee	Duration
[Test interview] The Shipyard	*Sourcing category manager*	*2:02*
The City	Public procurement director	1:50
The City	Development director of technical and environmental services	1:27
The Metal processor	Procurement vice president	1:42
The Metal processor	Manufacturing unit head	1:30
The Metal processor	Division vice president	2:06
The Healthcare manufacturer	Product Sourcing Leaders (x2)	1:22
The Infra-company	Procurement director	1:33
The Construction company	Procurement director	1:20

4.2 The City – purchasing "by the book"

It goes without saying that governmental organisations, like cities, are different from the private companies operating in market economy. That is only half true since governmental organisations have many things in common with normal companies as well. Because of the public procurement law there are different specialists among practitioners that are working with governmental organisations and private companies. This particular city has employees around 10 000 and 80% of all the purchases are services (some of them have tangible elements included). 30% of the purchasing spend goes to healthcare and 25% constructions. Most of the purchases are being bought through the public procurement process, which is regulated by law. As an example of the law is that all the acquisitions over 30 000 € (in items and services) have to go through the public tendering process (it has naturally more exemptions and restrictions). The field of public procurement has its own specialist and describing all the particularities here is beyond the scope of this work.

There were two interviews done with the City, first interview was done with the **public procurement director** and the second with the **development director of technical and environmental services**. It was possible to create understanding about the maturity level of the City with these two interviews. It was obvious even before the interview that

there would be challenges to fit the interview structure with the governmental context, but the interview was done keeping that in mind and adjusted when needed.

4.2.1 Interview Findings

Procurement in the City is mostly just a methodology office, providing help for the fields of operation. There are 16 people working in the procurement services and their job is mainly to make sure all the purchases will be purchased according to law, especially those that are above the public procurement cost limit. When there is a tendering process coming up for example in a hospital or school, the procurement people are invited to support the process. The procurement services do not have any business responsibility since their task is to provide methodological support, therefore they do not have direct targets to their work. The fields of operations are getting their budgets from the council and if budgets are not used fully the excess money will be spent on something else. It is obvious that they are doing their best to get the best price on the markets, but there is no explicit incentive for that. Most of the staff working in the procurement services of the City has a juridical background, which leads to the situation where the focus is mostly on the means not in the meanings. The people working in the City are careful to obey the law, since in the case of failing the tendering process the person responsible of the process is legally responsible for the consequences.

The two persons interviewed are representing different kinds of purchasing focus: The Procurement director has a strategic overall process under his supervision and the Development director (in technical and environmental services) is focusing on the purchasing of piecework's to build and repair the infrastructure of the city.

Public procurement director

The procurement director interviewed has a wide experience on public procurement and background in law. At the moment, the City is building its sourcing strategy and they are about to start implementing it in the next autumn. As can be seen from the interview results (see Figure 20), the purchasing maturity is not at relatively high level. It seems that despite the process that law forces them to obey, it does not make the purchasing maturity higher.

Demand planning in the City from the purchasing perspective is difficult. Purchasing basically gets request from the fields of operations and therefore demand data is not

actually known in advance. In more general categories, City's own research group is making forecasts about how "relevant volumes are changing" (need for schools and day care etc.). The city has systems for collecting data about purchases and e-purchasing, but it is not used yet. For this reason a lot of extra work is constantly done in order to produce reports and summaries.

In the whole organisation of the City, the purchasing is seen as "necessary evil and supportive function". It is not seen as providing actual value to the process. The most important role of purchasing in the City has been organising the public tendering process and making sure everything is done by obeying law. Procurement provides important information for strategic decisions but is not actually there when the decisions are made.

The actual tendering process is defined really well – it has to go according to the law. Nevertheless other processes like co-operation with the fields of operations outside the tendering processes is not part of the way of working. Suppliers are only evaluated during the tendering process and after the job or delivery, there is no feedback or data collected about the performance of the suppliers. Purchasing does not take part in developmental actions that is done in the fields of operation; the fields are in that sense quite independent.

Job descriptions are described in detail and the interfaces to other "functions" are written down, but not updated as regularly as they should be. This is due to the bureaucracy that makes changing job descriptions and responsibilities onerous. Complying the law in the tendering process is taking most of the effort that the purchasing personnel is bringing in to the process, which is away from the proactive screening of new solutions and suppliers which is done on the commercial side. The city has the technical competence in the fields of operation and the process understanding is centralised to purchasing. One problem that arose from the interview was the uncompetitive compensation that is paid to purchasing experts, which makes the recruiting of new candidates more difficult.

In the sense of controlling and measurements, the systems are not supporting the work as much as they could be. There is no measurement-system in place that would indicate that procurement department is doing good or bad work – no performance bonuses are

paid either. There is a target set by the council that costs should be lowered 2,5%, but there is no indicator that would follow that. The low usage of the e-purchasing system makes following the price changes in different contracts across the whole organisation rather manual work.

According to the questionnaire of Schiele, the City's overall maturity score from the first interview was 29%, in Figure 20 it can be seen how values are distributed to the dimensions. The "Yes-no" –questionnaire of Rozemeijer gave score 50% (5/10 "yes"-answers) and the estimate for Keough's model was in the middle of continuum at "Coodinated purchasing" giving the score 50%.

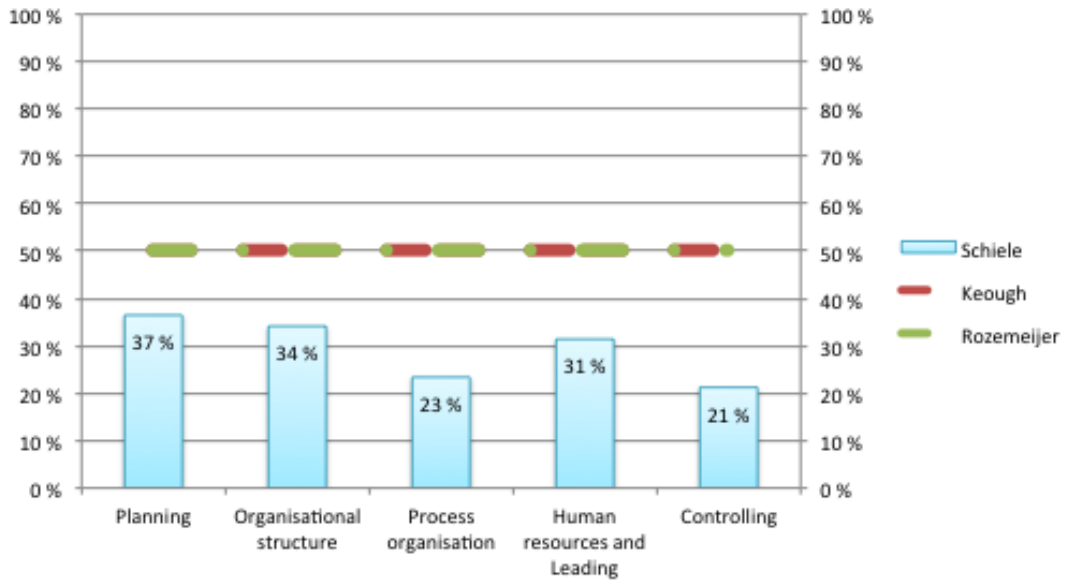


Figure 20: Maturity profile of the City based on the interview of public procurement director

Development director of technical and environmental services

The second interview from the City was with the Development director of technical and environmental services; his educational background is also from law. His career started from the building supervision bureau and after multiple vacancies in the City he was promoted to be the Development director. Technical and environmental services department is doing planning and construction, developing roads, municipal engineering and administering all the properties of the City. Most of the time is spent on planning new construction projects, maintenance and repair. The yearly budget of the department is 500M€, which is mainly used in construction projects. Since the department is operating mainly in project environment, they do not have a purchasing

department and the whole purchasing process is based on requirement definition and negotiations.

Purchasing basically defines the whole production process in the technical and environmental services, since it is the first thing to do when there is the decision to build something. The projects usually take up months, and purchasing is the only thing that the City does. After the contract has been made the project is taken care of by the contractor and supervised by the City. Pooling planning is done at the upper level. The City takes care that there is enough competition in the markets by timing the tenders so that potential suppliers will have enough capacity so that they can participate in the tendering process (for some job there are only few possible suppliers). Purchasing is involved in innovation and the market scanning by creating new ways of purchasing, for example life cycle contracts and scorecard methods for tendering process.

In technical and environmental services the engineers and architects are doing the purchasing, which in this case is the preparation of the purchasing process. The procurement service of the City occasionally helps when there is a need for new concepts in the tendering process (this was the case when new hospital was to be built). In the perspective of this department, the main tasks are purchasing projects and updating the database of the future needs for construction works.

In the technical and environmental services the projects are lengthy and can last up to several years. For that reason suppliers and other functions are involved early in the process so that right things can be written in the tendering documents. There is no actual sourcing strategy in place and usually the best way to operate is decided case-by-case. Supplier evaluation is done thoroughly in the tendering phase, and during the contract it is evaluated based on what has been decided in the contracts. There is no feedback given after the project and because of the equal treatment procedure defined in the public procurement law, the City cannot discriminate any company even if it performed terribly bad. The interviewee told that there is one case on going where the same supplier is being sued for not complying the contract and participating to an innovative co-operation project.

The job descriptions are in place and there is a clear hierarchy and responsibilities, the decision-making is divided so that there are certain sum limits that person in the certain

position can decide. Employees keep themselves updated about the trends of the industry by working intensively with projects. The interviewee mentioned about recruiting that they have a problem in getting young talents to work since the job tasks are so similar to the commercial side but the salary and career prospects are worse. Of course the governmental organisations offer some other benefits, such as permanent reliable employment, regular office hours and possibility to do good for the community. New recruits are recruited by public job advertisements, and then the best applicants are chosen to fill the position. The internal transfers are also going through this same prolonged process. Feedback about work is given and evaluated in the development discussions yearly.

The town council makes the overall goals for technical and environmental department and those are then adjusted to fit all the projects that are to be done. The council also decides the budgets and frames where the projects will be implemented from the suggestions by the technical and environmental department. The City doesn't collect any structured database about the projects they have done. For individual projects the spend data can be received but it is not structured to support some wider perspective of cost following.

According to the questionnaire of Schiele, the City's overall maturity score from the second interview was 28%, in Figure 21 it can be seen how values are distributed to the dimensions. The "Yes-no" –questionnaire of Rozemeijer gave score 70% (7/10 "yes"-answers) and the estimate for Keough's model was just between the "Coordinated purchasing" and "Cross-functional purchasing" giving the percentage of 60%. As can be seen from the interview results (Figure 21), the department's perception of the maturity level (Rozemeijer and Keough) is much higher than the actual maturity score they received from the questionnaire.

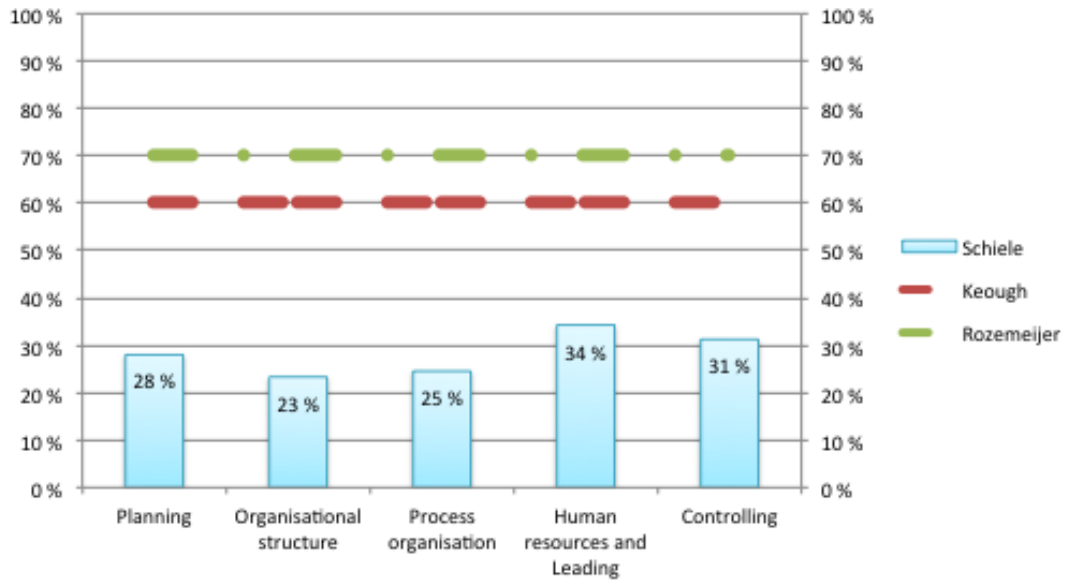


Figure 21: Maturity profile of the City based on the interview of development director of technical and environmental services

4.2.2 Combining the results

Even though the interviewees have different approaches to purchasing, procurement director representing all the purchases in the City and development director focusing on building and maintaining, the ways of operating and the organisation is relatively similar. The process-oriented mentality is similar to both of these. It can be seen in Figure 22 that the interview results are quite similar. The biggest difference is in the organisational dimension (11%), which comes from the point of view the interviewees are looking at purchasing. Procurement director is looking at purchasing as a department and development director as a part of everyday operations in their department. In technical and environmental services the purchasing tasks are integrated into the planning tasks, which causes the gap between the answers in the planning dimension. It has to be noted that margin of error with these interviews is higher than in other cases since the questionnaire is not designed for governmental organisations.

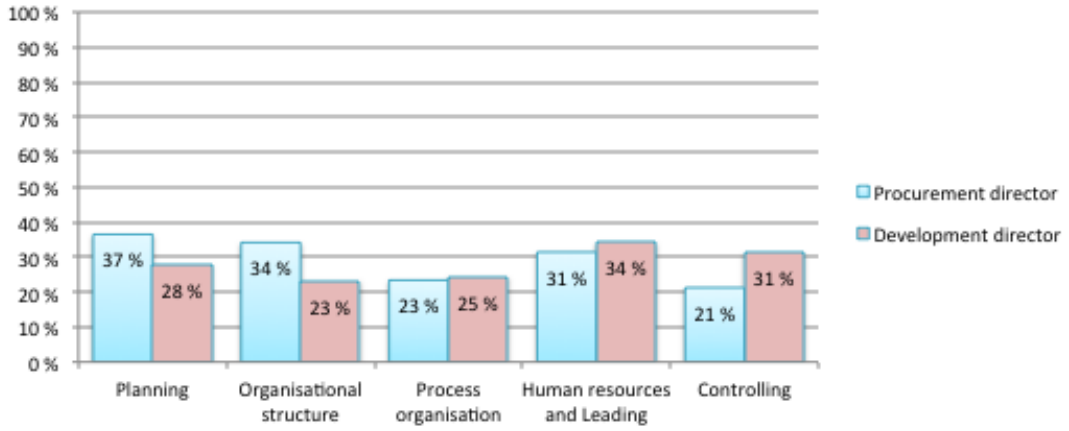


Figure 22: Conclusions about the interviews with the City, comparison of the questionnaire results

It was possible to see during the interviews and from the results that the City has certain kind of limiting factors that are preventing them from operating in more mature way. One of the most obvious factor is the public procurement law, that slows down the process and directs all the specs to be defined beforehand (compare to "serve the factory" ideology). In addition to that, law has the element of passivizing the purchasing personnel to wait for offers from the suppliers, not pushing for the pro-active search of new suppliers and opportunities. In order to be able to participate in the tendering process the company needs to have some experience about the public procurement process. Participating in complex tendering takes time and effort, which will eventually affect the price as well.

Another limiting factor is the decision making process which is mainly cost oriented. Budgets and decisions are made in the political process, which tends to be driven by political initiatives. Usually, the budgets are granted per year and if the budget is not used completely during the year, it will be lowered to forthcoming year, which is leading to increased spend at the end of the year (van Weele, 2005). Procurement has no incentive to search for savings, because that is not measured in any ways (from the interview of Procurement director) and because falling below budget is taken as "making the budgeting more difficult" (the interview of Development director). Another thing limiting the ability to get more savings is the lack of proper cost data database - "what you cannot measure you cannot control". Limiting the proactivity and tempo in the process is also the "bad memory" of public operators. If there have been difficulties with the supplier before (in deliveries, quality, ways of operating..) the City cannot discriminate the company or reward if some company has done good work in the past.

Figure 23 illustrates both viewpoints to purchasing maturity from the interviews, here all the results from the interviews of City has been comprised into one graph. The maturity percentage from the Schiele's is calculated as an average from the dimensions. Compared with the development director, the procurement director has more modest thoughts about the maturity, which can be seen from the Rozemeijer's and Keough's results. The averages from Schiele's questionnaire are almost the same. In this context, Schiele can be seen as representing the "actual" maturity level and then Keough and Rozemeijer more as an interpretation of the interviewees.

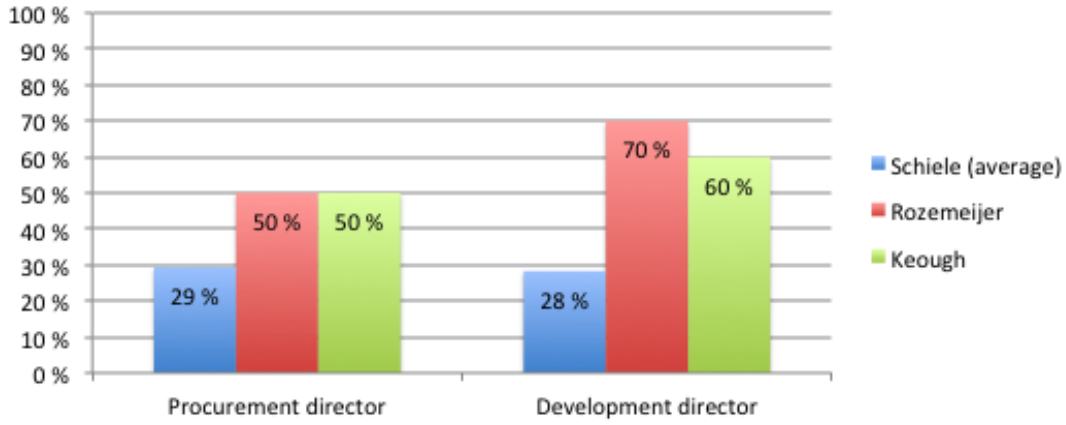


Figure 23: The City's maturity levels from two different viewpoints

4.2.3 Suggestions for improvement

The public procurement law cannot be changed easily, so that has to be taken as given. The proactivity on the purchasing and in the fields of operation side should be increased. Currently, it seems that by the time purchasing gets the commission there is already hurry. That is not always the case, but better ways to collect the demand data would help and improve the purchasing of the City. Purchasing should be supporting the fields of operations by sharing the best practices actively across the different divisions and making the tendering process almost invisible to the divisions, new purchasing arrangements like lifecycle models are a good example of things like these.

Related to that previous and to the "bad memory" issue, the City could improve their memory about past contracts with the better usage of IT-systems. Now there is HILMA (an internet platform where all the public tender announcements are published), but how about post-HILMA for the feedback after the delivery of the contract has been made? Public institutes could give, of course as standardised and as fact based as

possible, feedback about “how it went”. This would be naturally public information and this way good work would get its reward and bad would get its feedback. Small and Medium sized companies could get the recognition by this channel and big companies optimizing contractual penalties would get (fact based) recognition about that. It is inconsistent that everything is public before the deal has been closed, and after that only tabloid magazines will write, “How it actually went and how budgets were exceeded”. Feedback could also be used in the tendering process in the future so that Cities would not have to invent absurd reference requirements to the tendering documents just to fend off offers from unwanted suppliers.

The importance of spend visibility and cost control cannot be underestimated, by having a good quality data about past purchases and price developments, purchasing could better understand where saving have been made and where just raw material prices have gone up. Purchasing needs recognition, but not if the ways of operating are not improving. It is regrettable to hear that procurement is taken as “methodology department slowing down the operations”.

4.3 The metal processor – balancing between corporate control and independency

The metal processor company is a big corporation having 36 production facilities around the world; the site in Finland has 8% of its employees globally. The Finnish factory is small part of the production network and it is operating quite independently. The annual revenue of the Finnish plant is around 400 M€ and there are around 400 employees, globally they have 6000 employees. The products they produce are mostly special products that are made for direct customer orders; this affects on the way the purchasing function operates.

There were three interviews conducted in the metal processor company, the people interviewed were **procurement vice president**, **manufacturing unit head/procurement director** and **division vice president**. The interviews in the site were conducted during a two-day visit to the factory.

4.3.1 Interview Findings

In the metal processor company, purchasing has been integrated into the project organisation and basically there is no purchasing department at all, all the purchasing

tasks are integrated into the work of people in the projects. There is only one person at the Finnish site taking care of purchasing and that is the procurement vice president. As the procurement vice president said "purchasing organisation is not visible, it is sitting where the business is done". The responsibility of the costs is taken to the level that is actually spending the money, monthly meetings and measures are making sure that everything works as planned. Purchasing is appreciated in the organisation and it is recognised as being an important contributor to the competitive position. This decentralised or centre-led purchasing has been taken into use couple years ago when there was major restructuring effort in the corporation. So far the experiences on this model have been positive and the overall performance has been improved. "If the company is doing well, it means that purchasing is doing a good job", like the procurement director said, "the only purchasing metric that really matters is company EBITDA[6]".

These three interviewees are representing the management of the Finnish organisation; they were all telling the same story about the way purchasing is done with small nuances about how they see things. Having three interviews helped understanding the subjectivity of the purchasing maturity; every person has their own views about the operating ways. All interviews are presented individually and then later combined into one analysis of the purchasing maturity levels and observations.

Procurement vice president

The Procurement vice president has wide experience in managing production, purchasing, companies and research. During his long career, he has been working in a small machine shop, a big engine manufacturer, a research centre, a shipyard and everything in between. He has wide experience and understanding about industrial production that has accumulated during the years, this was seen in the interview when he was telling how they are doing purchasing. It was emphasized multiple times during the interview that purchasing is important part of the business and it should be truly integral part of other functions. If purchasing it is separated from other functions, there will be difficulties especially in keeping the customer orientation in mind. If there are no sales, there is no need to buy anything. The strong view was that "purchasing should

[6] EBITDA = Earnings Before Interests, Taxes, Depreciation and Amortization

take care of the preconditions of business and customers, there will always be problems when purchasing starts to sub optimize itself".

It already came clear during the introduction; the purchasing in the metal processor is an integral part of the project teams. Therefore the demand is immediately known to purchasing when others know it in the organisation. Most of the materials and services are ordered directly to the sold project, so that forecasting and pooling the demand is difficult. Raw materials are the only categories where purchases are consolidated. The industry is traditional and there are not many innovations to come, so there isn't any specific process for market environment scanning or innovation planning in place. It was emphasized many times during the interview that all purchasing decisions are made together and keeping the customer in mind.

The organisational structure is decentralised, responsible persons are named and the organisation is continuously developed if there are changes in the projects. Since the purchasing is decentralised, purchasing is responsible for most of the spend. Even though the corporation is huge, the organisation is really flat and decisions can be made quickly. There are no actual interfaces defined, everything is done together so that "production will keep running and things work". Procurement is recognised to be an important part of the organisation, the corporation procurement director reports directly to the CEO and takes part on the strategic discussions in the corporation board. Purchasing directors have weekly calls where they discuss the metrics and the issues on the table, the exact metrics and good teleconference policy ensures that time is not wasted.

Processes had the lowest score from the maturity audit (50%); the main reason for this is the flat organisation (integral purchasing) and the mature industry. Mature industry affects on the suppliers, so that the field is not changing that much. Sourcing strategy is in place and being developed all the time, the suppliers are always selected in consensus with the whole project team, but mostly the cooperation done with suppliers is long-term. Supplier evaluation is mainly done during the yearly price negotiations and the development of suppliers is done in the similar manner. Purchasing is not actually part of the product development process and neither are the suppliers, in most cases the products are designed and then just manufactured. Purchasing is in cooperation with

other functions intensively; everything is done in project teams where all functions are represented.

In Human resources side the maturity score was 51%, all the key functions are documented and all the employees have a good level of skills and the understanding about the business. All the processes for the recruiting and trainings are at the detailed level and used in all the divisions worldwide. In yearly development discussions targets are discussed and new ones are set.

The controlling processes were defined well; targets for the company came from the division targets that are mutually agreed. Targets are then broke down to the floor level and reviewed regularly. For every division there is a very detailed procurement reporting table, which has multiple measures that are followed on the monthly level with management. Reporting works really well and targets are followed, but in the commodity level there are not really commodity codes that could be used in order to compare purchases (apart from indirect and raw materials) with other divisions, on the other hand the needs and products are so different between the divisions.

According to the questionnaire of Schiele, the Metal processor's overall maturity score was 61%, in Figure 24 it can be seen how values are distributed to the dimensions. The "Yes-no" –questionnaire of Rozemeijer gave score 80% (8/10 "yes"-answers) and the estimate for Keough's model was just between the "Cross-functional purchasing" and "World-class supply management" giving the percentage of 80%.

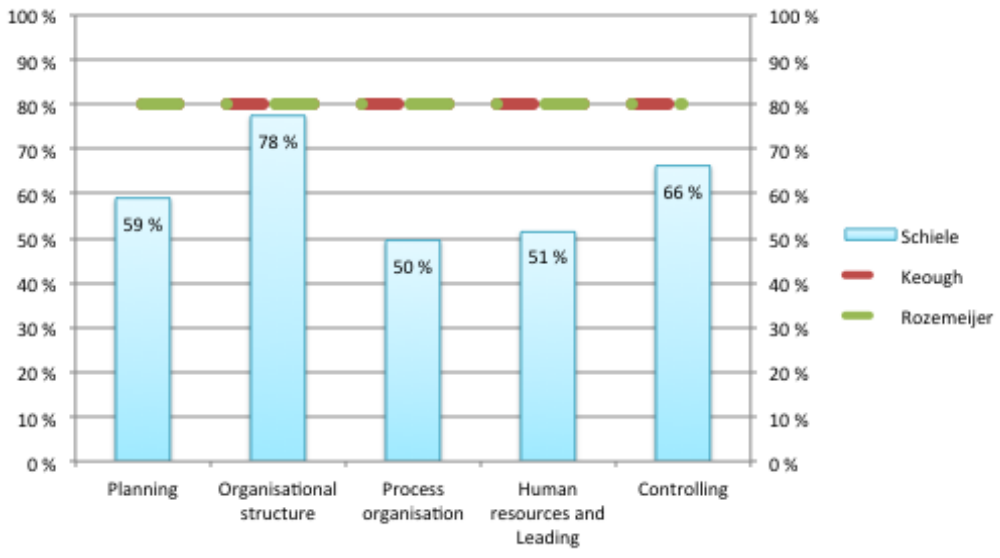


Figure 24: Interview of the procurement vice president of the metal producer company

Manufacturing unit head/procurement director

The second interview was done with the manufacturing unit head, who had a double role of being procurement director at the same time. The interviewee had wide experience in doing research in the University and different R&D departments in the metal industry, since 2008 he has been leading this particular manufacturing unit. During the restructuring of the company, in 2011, He received his second role: procurement director, in addition to his normal tasks. Being the procurement director doesn't mean he would be taking care of all the tasks related to that, he is just making sure everything gets done.

Demand for purchasing is derived mostly from the production schedules, he mentioned that purchasing could involve earlier in the demand planning process. There is no corporate wide pooling of volumes done, since the needs for different units are so different. Purchasing mandates are given to managers and different approval limits are divided based on the managerial level. The environment scanning is done through tendering and working with customers. In this business, "most of the customers know what they need, usually the demand for new innovations or solutions comes from the customer and then it is transferred by us to the suppliers". Every month there is a company wide teleconference where insights from different divisions are shared.

The organisational structure works as lines, there are certain people who have the procurement rights and rights to approve things, then some issues are escalated to higher or solved within the units. The responsibilities of the purchasing spend has been lowered down to people who are in charge of using it, this has been good improvement. Most of the sites operate independently, so most of the communication between factories happens through the managerial level. While having the double role, the manufacturing unit head takes part in all the strategic decisions in his unit.

There are processes in place for most of the things, since quality programs are so demanding: therefore, procurement policy exists and is in use. The negotiations with suppliers could be more organised, sometimes all the objectives are not decided beforehand. There is now a new scorecard that is used to evaluate all the suppliers, but the results are not yet communicated to them. Feedback is given to suppliers mostly in

reclamation situations and in price negotiations; these are also the situations when the supplier development is done.

The job descriptions are existing and described in the sourcing strategy document. Most of the purchasing personnel have really good technical competence. It is important that they all understand the importance of quality. Feedback in the organisation is received through teleconferences, where all the functions can bring suggestions to the table.

The targets for the divisions come from the corporate headquarters, and then broken down to divisions and units, eventually the targets are taken to the ones that are responsible for consuming the item. The reporting table has many measurements that are followed monthly, if there is some deviation from the plan, the reason and the corrective action has to be reported. The most of the product specific spend calculations are being done with excel or equivalent, since the IT-systems are not supporting the commodity classifications. IT-system support production related metrics but not purchasing related historical data gathering.

According to the questionnaire of Schiele, the Metal processor's overall maturity score was 46%, in Figure 25 it can be seen how values are distributed to the dimensions. The "Yes-no" –questionnaire of Rozemeijer gave score 60% (6/10 "yes"-answers) and the estimate for Keough's model was in between the end of "Lowest unit cost" and "Cross-functional purchasing" giving the percentage of about 45% (35-60%). Here the perceptions of the maturity level (Keough and Rozemeijer) and the interview are aligned quite well.

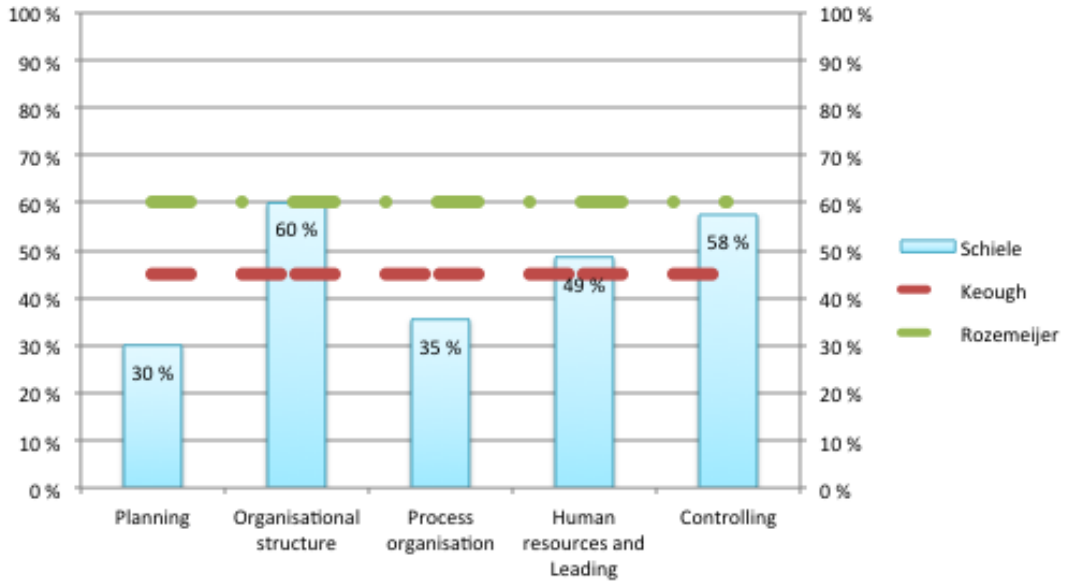


Figure 25: Interview results of manufacturing unit head/procurement director of metal producer company

Division vice president

Third interviewee was the special products division's vice-president who is also responsible for the procurement in his division. This does not either mean that he would be making the decisions and actual buying, but because of his rank he is responsible for the contracts and processes. The Division vice president has the background managing industrial production for several years. Like all the other interviewees he also emphasised the importance of keeping all the time customers in mind, and the difficulties that centralised purchasing might bring to that process.

In the division of the vice president, the project leaders are taking care of the whole chain: sales, execution and purchasing. In that sense, purchasing is deeply involved all the time; the purchases for the projects are divided so that the line (division administration) is buying everything that the welder requires (welding fumes and strings, plugs and small parts) and then the project leaders buy machining and other services. With components, they have started just recently to use kanban[7] boxes to get rid of problems caused by the lack or loss of small components. Corporate or company-wide pooling is not done apart from basic consumables such as raw material and welding

[7] Kanban is part of the lean production system. In Kanban there is two or more boxes full of components and when all the components from the first box is used, the box is sent to the supplier (as an order) and they will start then manufacturing more those components.

fumes (and indirect purchases), there have been attempts of pooling the purchases between divisions and factories but because of the differentiated needs it has not been successful. The environment scan is done very carefully with the main raw material, but other suppliers are not viewed so systematically. Years ago when the company had bigger R&D –department, the technology trends were followed more methodologically, now it is integrated into the responsibilities of the unit managers.

The organisational structure is defined well and all the responsibilities have been described explicitly in the intra-net. Cross-functional collaboration is part of everyday work, because of the flat organisational structure. The cost saving pressures experienced after the 2007-2008 financial crisis have had positive impact on the collaboration between different departments. Especially production and purchasing have been practically forced to work together in order to find savings and effectiveness.

The forming of the sourcing strategy is now in progress, but the principles are already in place. Procurement policy has been there already for a while. Supplier selection is done in the division together with all the functions, but the final decision goes to the unit director. The preparation for supplier negotiations was seen as a point were some improvement could be done, the interviewee mentioned that on the sales side there are systems and training-programs for how to prepare for a negotiation (Sales System), but the purchasing side is missing this kind of effort. Some established practices are used depending on the department, but corporation-wide purchasing system does not exist like on the sales side. The recently implemented lean production system has brought new things to purchasing, such as supplier monitoring (delivery times, claim density etc.) improvements and productivity issues. Supplier evaluations are still communicated mainly during the price negotiations, but there are plans to increase the feedback communication with suppliers and even start having supplier-workshops and –days.

In the human resources and leading side the roles and responsibilities are all at the detail level and the technical competence is at the high level due to the double roles of the project managers. Recruiting and training plans are made systematically, according to corporation standards.

In target setting purchasing is involved early in the process when the budgets are being decided, targets are then broke down to unit levels and then reviewed monthly. The

analysis of money spent is done somewhat manually and purchases are not categorized in order to help making the spend analysis. The high level of customization of the produced products is making the building of the commodity code system difficult, it is also a matter of another conversation if that is even worth the effort.

According to the questionnaire of Schiele, the Metal processor's overall maturity score was 52%, in Figure 27 it can be seen how values are distributed to the dimensions. The "Yes-no" –questionnaire of Rozemeijer gave score 70% (7/10 "yes" -answers) and the estimate for Keough's model was just between the "Coordinated purchasing" and "Cross-functional purchasing" giving the percentage 60%, the interviewee mentioned that there are certain elements that are at the higher level in the maturity model and some that are in the lower.

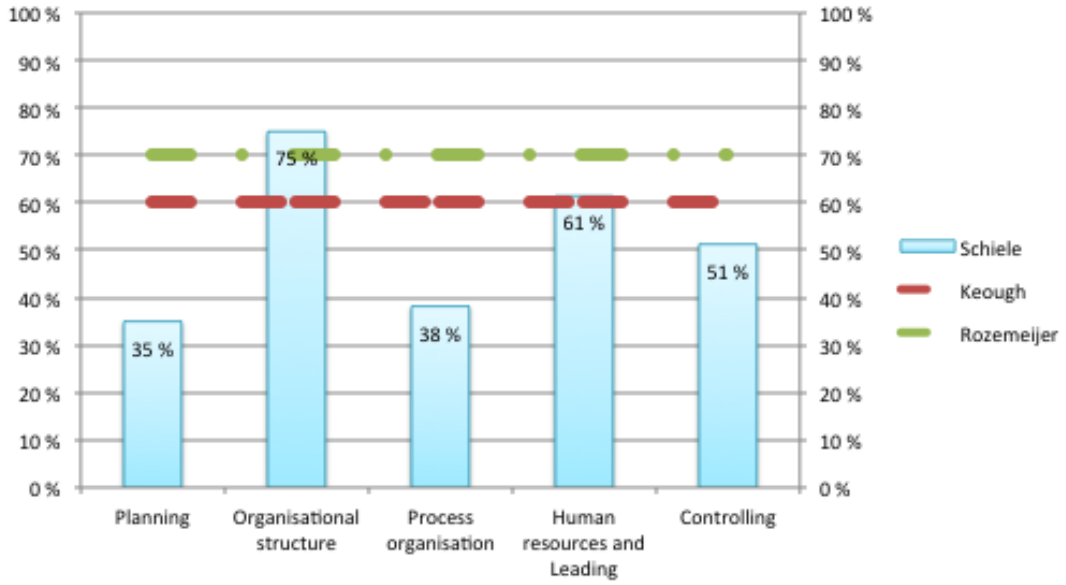


Figure 26: Interview results of special products division vice president of metal producer company

4.3.2 Combining the results

This interview proved the point that measuring maturity of an organisation is really subjective: people see the processes and ways of working differently. Some are more optimistic and some might even be unaware of the ways of working or what is going on in the other units. From Figure 27 can be seen how differing answers were received from three people in the same organisation. The order of the interviewees in the chart has been changed (from the order of the interviews) to visually demonstrate the hierarchy in the organisation. Procurement vice president (first interview) is seen as the highest

purchasing authority in the local organisation, the second highest is the division vice president (third interview) who has the overall business responsibility of multiple units, manufacturing unit head (second interview) is reporting to division vice president and closest to the actual production.

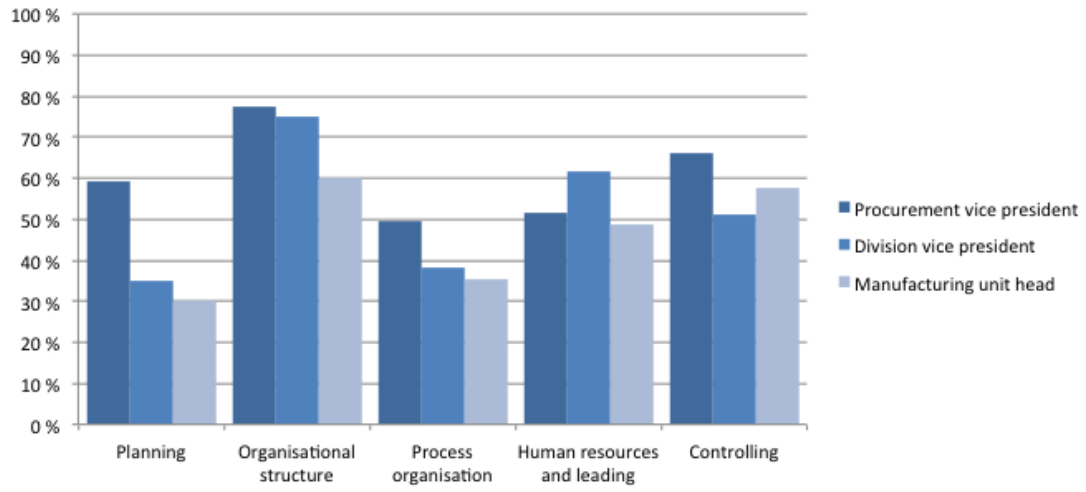


Figure 27: the metal processor's maturity profiles with the questionnaire of Schiele

When analysing the results closer in Figure 27, it can be seen that the procurement director had in every dimension, except in HR, the higher maturity score than other interviewees. The trend seems also to be that the closer you are with the production, the worse your perception is about purchasing maturity. HR and Controlling are the dimensions where this rule doesn't work, but the questions there are also more general and explicit, so that perception was not affecting on the answer as much than in these first three dimensions.

This same thing about hierarchies' relation to purchasing maturity results can be seen in Figure 28 where all the quantifiable results from these three interviews have been concluded together. It illustrates (maybe even too well) how the maturity level is lower in every indicator when going closer to the production. The more involved you are with purchasing the better you can say things about the processes and the ways of operating, which seems to lead to better maturity score in questionnaires.

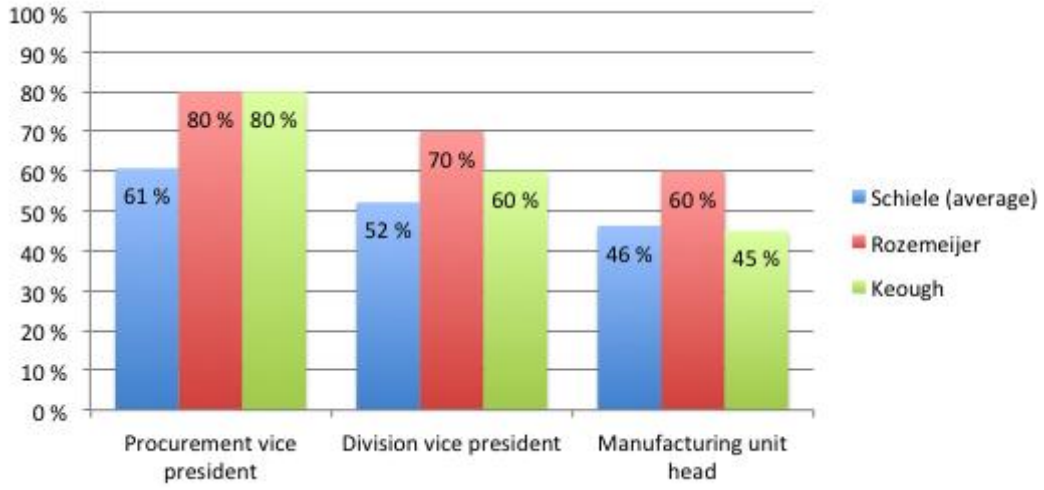


Figure 28: The Metal processor's maturity levels from three different viewpoints

After analysing all the interviews individually, the cross-case analysis was then conducted and the answers to individual questions in the questionnaire were reviewed. It was found that there were couple questions where interviewees answered so that their view did not actually present the way things in the company were. In some cases it was because of the misunderstanding of the question or just interpretation that led to different understanding about the current situation. When talking about IT-tools for pooling the demand, the procurement vice president mentioned corporation wide systems that are in place for some items, but there were not many of those items, others just said that the systems didn't support pooling the demand since they had never even seen that system. The same kind of misconception was with the supplier negotiation process, basically there is an informal process that should be used, but then others said preparation to negotiation is not done always and no formal way of doing it exists. In question about supplier evaluation one interviewee did not even remember that there was a person assigned for that. Other question causing misleading results was the one about integration and collaboration with other functions, it was hard to define explicitly since some layers are interacting but some are not.

Even in the simple questionnaire of Rozemeijer where only yes and no answers were allowed, there were differences between these three interviews. In six questions, there was consensus between all interviewees. The answers deviated in the questions about things that were not unambiguous such as: "The purchasing spend with outside parties is high and increasing" and "In our company, purchasing's main goal is achieving the

lowest total cost against the highest value". For questions like these, the answering depends on the person and his views about the purchasing.

4.3.3 Suggestions for improvement

It became clear during the interviews that the metal processor company has the new direction and the mindset about purchasing. The company has gone through big changes during the last couple years and it seems that pieces are now finding their places in the organisation. Even though according to interviews everything is going well, there are things that need more attention and future considerations. Understanding the demand better was seen as one point to improvement, now the demand for purchasing is coming through the sold projects and in the shop-floor level from kanbans. Another thing that arose from every interview was that the supplier development actions are now hardly existing: preparations to the negotiations, evaluating the suppliers and communicating the feedback could be more systematic. It was mentioned that there were thoughts about supplier day or supplier workshops, it was still on the idea level but could be a good idea to try out.

Forecasting demand in the project environment is very difficult and not many have been successful in that. What could be done is to increase the visibility of the process, so that even suppliers can see what is possibly coming, so that when the actual request for quotation is sent to the supplier, they are prepared for that. Also data from the markets can be acquired more systematically, but this goes beyond the purchasing scope for the domain of sales management.

There has been the Lean production system taken in use in the metal processor company, which is already increasing the supplier collaboration. There was a need for a systematic purchasing system recognised that would bring more systematic ways of operating in supplier negotiations and relationships. Even though the relationships might be long lasting there were no mutual goals with suppliers or common development plans. That could mean having blanket agreements and improvement targets for suppliers where there would be shared rewards for both parties. The factory is important part of the local industrial ecosystem and therefore initiatives to develop local subcontractors could have positive multiplicative effects.

4.4 The Healthcare manufacturer – "if its not on paper it didn't happen"

The healthcare manufacturer is a large corporation that is operating worldwide. The company has established processes and there seems to be a job description and instructions for everything that could be imagined. Purchasing in that organisation has been arranged to work in three dimensions: geographical area, commodity and products. Their products are complex medical devices, which have very strict regulations on manufacturing and assembly. If the job descriptions are not in as detailed level as should be the FDA (US Food and Drug Administrator) has the authority to close the entire production facility (only in US), so they really have to keep documentation at the precise level. The healthcare manufacturer is using only audited suppliers that have achieved the high standards of operating. Company has about 800 employees in Finland and over 50 000 around the world, the revenue of the Finnish company was 260 M€ in 2011. The company has gone through major changes in the field of purchasing after 2006 when new Sourcing Executive started. Their mentality changed then "from combative to co-operative" and they started to put more emphasise on partnerships and collaboration with suppliers.

One interview was done with this company, with two interviewees at the same time taking 2 hours and 6 minutes. Both of them were **Product Sourcing Leaders**, it means that they are both working in a product development teams and making sure that the best and the most suitable materials and components are acquired from the markets. Product Sourcing Leader is basically working between commodity/category managers and product development team to balance the needs and requirements from both directions.

4.4.1 Interview Findings

The healthcare manufacturer's purchasing is in the highly mature stage. There are plenty of processes in place, all the functions are working in collaboration and controlling mechanisms are integrated into the everyday operations. The company has good IT-systems that are making the information gathering and processing easy. Purchasing is appreciated and having an important role in the business. Figure 29 shows that according to all these maturity measurements purchasing is done "as it should be".

Therefore this case is representing the highly mature purchasing, but still there are some issues unsolved and things that could be improved.

The planning of the demand is done already before the product development is even started. Purchasing is involved in the core-team during the process of developing the product and demand for the product is reviewed in every milestone the. After the product launch, the product managers produce the demand forecasts using the historical data and the overall market situation. Commodity/category managers are responsible for pooling and combining the demand; they are proactively providing suggestions and help for the core team through product sourcing leaders. Most of the purchasing data can be found in the companywide IT-systems, which supports the cost awareness and helps the work of purchasing sourcing leaders. There is market data and reports produced and bought regularly so that people are kept informed about the market environment. Technology roadmaps are known from the strategic suppliers and reviewed regularly in the quarterly business reviews.

Purchasing in the healthcare manufacturer works in a matrix-organisation, job descriptions are at the detailed level and the people responsible for purchasing are assigned, “everything else than prototyping purchases are going though purchasing function”. All sourcing is done globally and category managers are looking at the best opportunities across the national borders, unified corporate training programs and regular conference calls are making sure that the people in the corporation are collaborating cross-functionally and between different divisions. In the corporation, the purchasing is under the supply chain management, which then is on the executive board. Purchasing is appreciated in the core teams and bringing value to the process. Hazardous events like earthquakes and floods that have been happening recently have increased the recognition of purchasing function, when supply difficulties have been solved with fast moves of the purchasing function.

There are multiple processes described and used in the company, cross-functional decision making in supplier selection and evaluating is part of everyday work. While preparing for the negotiations, goals and targets are mutually agreed. The price is usually estimated before the negotiation, the mentality is rather “should cost” than “what cost”. All suppliers are evaluated precisely before they are approved to the supplier network, and it goes without saying that the quality requirements are really

high because of the regulation. There is a supplier development program in place and the corporation even has its own consultants who are helping suppliers to develop their production according to Lean principles. With strategic suppliers the contracts and the collaboration are aiming for mutual benefits, they are using frame contracts and open-book –principles. For some suppliers, partnerships are not even the wanted form of relationship: “it’s always balancing with base costs and achieved benefits”. Supplier day is organised yearly and there are workshops organised with suppliers every now and then in the product development projects. Suppliers and purchasing are involved in the New Product Introduction (NPI) -process from the start. The only thing here that arose from the interview was the need to improve supplier evaluation and feedback processes, so that there would be continuous feedback in both directions. Currently most of the reciprocal feedback is given during the price and contract negotiations.

The employee matters are taken care of very systematically, there are internal trainings organised constantly and employees are encouraged to develop themselves and to proceed with their careers, the corporation is even requesting that. The development is measured in every training and feedback is collected from multiple sources, the interviewees mentioned about the 360°-process where feedback was collected from all the people that you are interacting with.

Measuring and controlling are taken really seriously, as mentioned earlier, all the processes are described in detail and everything has to be on the paper, otherwise “it didn’t happen”. The principle in the targets is that “if it cannot be measured it’s not a target”. The reporting tables have multiple metrics that are measuring the purchasing performance, but the most important thing in mind is always the shareholder value. IT-systems are supporting the analysing of the spend data and it was mentioned that there is almost too much information available in the systems.

According to the questionnaire of Schiele, the Healthcare manufacturer’s overall maturity average was 86% in Figure 29 it can be seen how values are distributed to the dimensions. The “Yes-no” –questionnaire of Rozemeijer gave the score 90% (9/10 “yes”-answers) and the estimate for Keough’s model was between the “Cross-functional purchasing” and “World-class supply management”, giving the percentage of 80%.

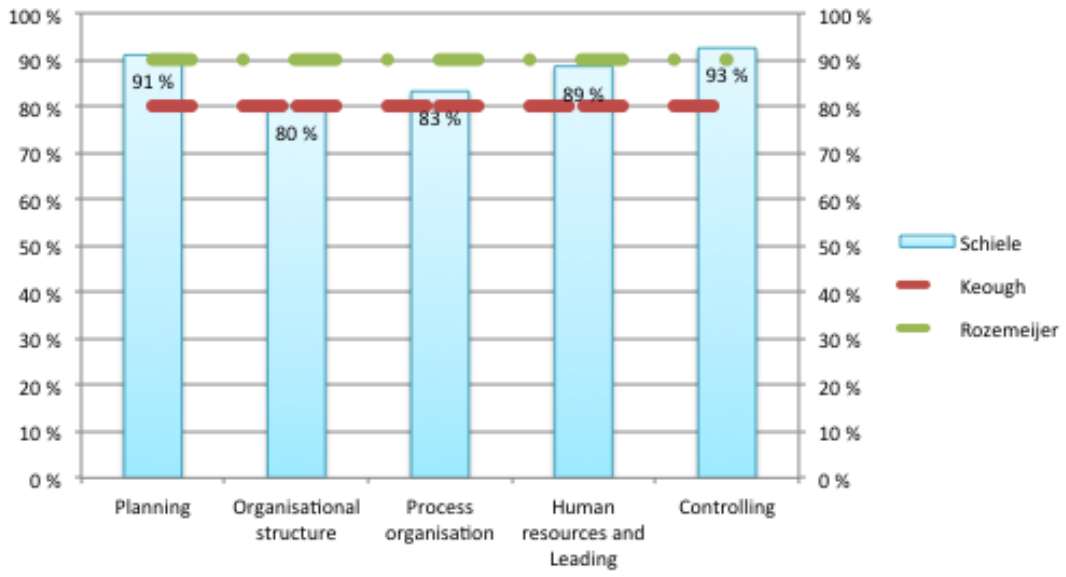


Figure 29: Interview results from the Product sourcing leaders of the healthcare manufacturer

4.4.2 Analysis and suggestions

In the purchasing maturity viewpoint there is not much to develop, most of the answers received had the maturity score higher than 80%, which represents a sort of ideal way of operating. Luckily there is always something to improve and ability to develop and learn new things is basically part of the being in highly mature level. The interviewees mentioned that some suppliers tend to be really slow in decisions and their moves, things are happening rather in weeks (or months) than in hours. This thing is hard to change and it comes from the strict regulations that are forcing the company to have very detailed and "waterproof" processes. Streamlining the approval processes or structuring the operations from the new perspective could accelerate the tempo.

As was mentioned in the interview, the feedback from and to suppliers is seen as the point of improvement. Continuous feedback could help the suppliers to adapt and understand the slow paced healthcare business, the more information is shared the better can the suppliers adapt to changing situations.

4.5 The Infra-company – corporate purchasing between rock and the hard place

The Infra-company is an infrastructure and construction service company operating mainly in Finland. They have over 1 500 employees and in 2012 they made above 500M€ revenue. Infrastructure as an industry is "old fashioned" and not changing as fast as

other industries, like the interviewee said, “we are working in the industry of dinosaurs, the only industry that has worse productivity development than our industry is social welfare”. The company has operations all over Finland and therefore the organisation is divided into four regional divisions and two divisions operating in special and service related issues. Purchasing is placed on the organisation under the division of southern Finland. It doesn’t report to the executive board (only indirectly) but has the responsibility of all the purchases in the organisation. The convention in the industry (constructions and infra) is that responsibility of purchasing is kept within the project organisation and every project has its own person responsible for purchases (purchasing engineer). The corporate procurement director is in a hard place when trying to help projects but at the same time disrupting the old ways of working. From the total purchasing spend about 60% is services, keeping projects in schedule and making sure things work in the site is depending deeply in personal relationships.

The person interviewed was the **procurement director** of the Infra-company; he has wide experience from the industry and has been working in different positions (sales, technical director, project management, purchasing…) since the end of 1990’s. He has been the procurement director since 2009, when the position was created in the company. Before that he was working as a procurement head taking care of the centralised material and service purchases.

4.5.1 Interview Findings

Purchasing is organised well in the infra-company, but there are still many things that are in the list to be developed. They are looking for consensus on the way that purchases should be organised. The projects are responsible for their own results and operating quite independently therefore all the inquiries and restrictions from the head quarters are usually taken as an extra work interrupting the “real work” that is happening in the field. The quantified results of the interview are seen in Figure 30; all the dimensions seem to be approximately at the same level, around 40%.

As the work is always project based, the planning of demand is really difficult. The amount of forthcoming projects can be estimated, but it is always unsure until the tendering process has been won. Combining the demand in different projects happens rarely, and without any dedicated tools for that. The amounts purchased next year can

be estimated according to the last year's spend (in euro) in categories where there are yearly contracts, there is no possibility to give more detailed level information about the timings or sorts that will be purchased. The category managers that are actively organising tenders and providing help for projects are doing the environmental scan of the supplier market. There are not much innovations emerging in the industry, but conversations with trusted suppliers are at that level, so that ideas about future process improvements are being shared openly. It is unfortunate that not many innovations are taken into use, because of the tendering documents that usually have detailed descriptions how the project should be made (materials and methods). Therefore the attempts to offer something innovative will lead to the rejection of the offer for not complying the request. It is true that changes can be made after the tendering process is over, but that would mean horrible amount of work and wasting the work already done on both sides. In addition to that there is usually hurry or the project is already late in the schedule.

The purchasing is organised so that all the projects have a purchasing engineer and the centralised function has category managers and purchasing director, which are responsible for coordinating the whole show. All the people involved in purchasing are communicating often and four times a year they have gatherings where they share insights and experiences. Procurement director is reporting to the company's management through division head, and therefore not having a seat in the management team or on the executive board. This arrangement is made so that purchasing is kept closer to the projects and "concrete action".

The sourcing strategy is in place and updated every year. The supplier selection works with the standard process, practically all the purchases are going through the tendering process. Communication with suppliers during the contracts happens mainly when there is something wrong and no feedback is given apart from the contract-suppliers. While projects are working independently, they are also taking care most of the reclamations by their own so that general view of the suppliers cannot be drawn reliably. Lately purchasing has had a major role in development projects such as systematically taking down monopolies and spreading good practices that have been learned from individual projects. Quality and risk management (the same person) is close to purchasing and they have conversations monthly about the current processes.

The job descriptions are in place but there is a need for harmonizing the roles of regional purchasing people. All the personnel have technical competence on the purchased items, they are closely integrated into projects and most of them have education from the construction domain. The infra-company is training their new purchasing personnel with a standard course about purchasing basics and some additional training will be arranged when needed. Everyone has scorecards about their performance that are discussed in the development discussions yearly. Feedback for purchasing is asked from the projects with surveys, but the feedback was not seen always that fruitful since: “we are twisting about issues that they are not happy about, such as changing the old ways of working”. It goes without saying that this is not always the case; most of the time corporate purchasing and projects are operating in consensus and beneficially to both.

The targets for the purchasing come from the business targets set in the board; targets are then adjusted from those and accepted by the division head (southern Finland). There is distinct metrics that is used to measure purchasing performance; cost reductions are of course one important target. There is an item-coding system that is used in the purchasing system, but it is not used so much. The spend analysis can only be done at the supplier level, but not that well at the category or item level.

According to the questionnaire of Schiele, the Infra-company’s overall maturity average was 42% in Figure 30 it can be seen how values are distributed to the dimensions. The Yes-no –questionnaire of Rozemeijer gave the score 60% (6/10 “yes”-answers) and the estimate for Keough’s model was between the “Lowest unit cost” and “Coordinated purchasing”, giving the percentage of 40%.

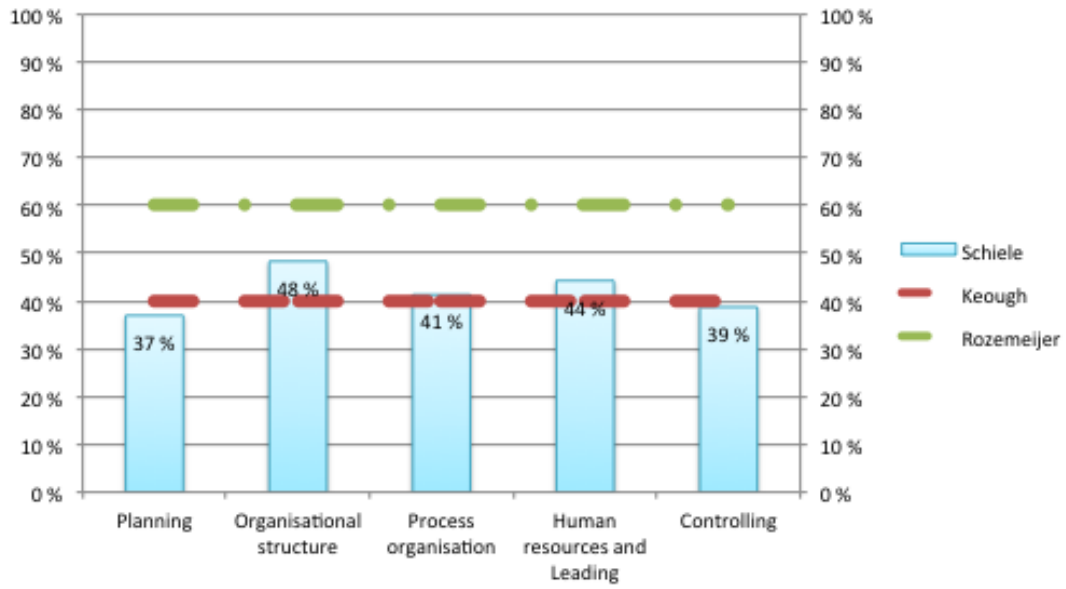


Figure 30: Interview results from the Procurement director of the infra-company

4.5.2 Analysis and suggestions

The Infra-company seems to have problems driving change in purchasing, it could be heard from multiple quotes in the interview that corporate purchasing was seen as more disrupting than supportive function by the projects. The thing that is either not helping is that purchasing is not seen as an executive level issue in the organisation, it can be speculated that this has an effect on the respect received from the divisions. There is kind of struggle between the centralised and the decentralised model, it is regulated that "yearly contracts cannot be done in the regional organisations without centralised purchasing" even though the projects have their independence in all other purchases. These kinds of things can lead to inconsistencies that are causing more trouble than relief. Purchasing should have mandate to execute the development ideas they have but also keep in mind that it should be in the conditions of the business, not just optimising the purchasing to purchasing function.

Another challenge making the purchasing work more difficult in the industry is the lack of demand data, since projects are always unsure until they begin. That makes doing contracts with suppliers difficult when there are no guarantees that they would have certain amount of work. It is true, but it could be tackled with blanket agreements ("you'll get at least 50% of all of our works") or then by following the purchasing spend in more detail so that better forecasts can be made, for example using the BIM-technology (Building Information Model), to get more detailed information to suppliers

already early in the projects. This trend is already happening in the building construction industry and improving the quality and cost awareness. System improvements like that could be nice and refreshing, but it needs a lot of positive attitude towards change.

The group-wide visibility of the suppliers was also seen as an issue, for example reclamations are usually handled in the site with the supplier and then work continues. Individual people will get gut feeling about which suppliers are good and poor, but objective and quantitative information will not be gathered apart from surveys are sent to project managers every now and then. Using some simple metrics to measure the performance of all the deliveries could solve this problem. Every time some service or material has been delivered, when marking the invoice received to the systems, simple feedback could be tapped. It could be done using likert scale (1 - 5) or with “smileyface”-scale (see Figure 31). Gathering this data could help easily to quantify the gut-feelings that people have in the field about certain suppliers. The feeling scale is usually the most important in the service business, a good example is the cafeterias that have placed a simple machine (in Figure 31) to the outside door where simple feedback is collected.

Figure 31: the machine used in the cafeterias to collect feedback from the customers (“was your lunch tasty?”)

It is not directly related to purchasing, but the public tendering process was seen as slowing down the development of the industry. It was said that most of the calls for bids are written so in detail, that even though better roads or bridges could be built, the slow and bureaucratic process makes that very difficult to push through. Changing the plan

already made is not motivating for either party. This makes bringing innovations from the suppliers more difficult, apart from some pilot projects.

4.6 The Construction Company – building the fundamentals in the company

The company interviewed was fairly young construction company that has been growing aggressively in the recent years. There are now 120 employees and in 2012 they made 60M€ revenue, they are still a relatively small player compared with the "old giants" in the industry. The company didn't yet even have an organised purchasing function in place three months ago when they hired a procurement director to basically build the operations and practices to match the requirements of growth.

The on-going changes and coming process improvements made the definition of the maturity level according to the questionnaire difficult. Other thing hindering the results was that the **procurement director** interviewed had only been working in the company for short while. In spite of the difficulties, the interview was conducted and the maturity profile constructed, even though the answers remained a bit shallow for some dimensions. In addition to the things about the Construction Company, the interviewee was able to tell widely about the purchasing culture and conventions of the construction industry with her over 30 years of global experience.

4.6.1 Interview Findings

At present the purchasing in the Construction Company is working the same way as in most of the construction companies: there is project team working with the current project, in the construction site supervisor and procurement engineer is taking care of the purchasing of subcontracts and materials to the site. Before starting the construction project, the purchasing plan is made and the budget is set according to the received pre-offers. Then after approving the plan with the site management, procurement engineer will start sending actual RFQs and asking for better prices, the best and the most credible offer will be accepted and contracted for the project. Then eventually the project is ready and it can be reviewed how well the budget held true.

This is the way most of the small companies operate in the construction industry, the bigger the company, the better centralised functions for the operations they have that can actually use the economies of scale into cost savings and competence centralisation.

The Construction Company is now building the ways of operating but the maturity level is already at the good level (see Figure 32 for details), mostly for the sake of the project environment that forces the company to be organised at the detailed level and cross-functional teams.

The planning part of the purchasing is working through offers made to contracts and based on projects that are already won. Pooling the purchases is happening only occasionally and without any system, of course that is in the plans to be implemented more systematically later. Everyone is responsible of themselves to be knowledgeable about the industry trends and for reading the professional magazines.

Organisational structures come from the straight command line that is usual in the construction industry: the supervisor of the site is responsible for the project and makes all the final decisions about the purchases. The purchasing director is bringing more collaboration between procurement engineers so that best practices can be shared and overlapping work can be avoided. Even though the role of purchasing has been "…recognised to be the important contributor to the competitive position"[8], the procurement director is reporting to production manager and not attending the meetings of the executive board.

Many of the processes are still under development and the company is investing now in the development of different systems to manage processes better: a system for demand pooling, supplier database, and category management are for example being developed. Collaboration with other functions is working naturally well when the company is small and there are even double roles (procurement and logistics is the same). Risk management is big part of procurement work; suppliers need to be checked carefully to avoid the unnecessary risks of frauds or bankruptcies that are somewhat common in the industry.

There is not much to say about human resources and leading, the purchasing organisation is being built at present and the developmental discussions are done bi-annually.

[8] This quote is from the questionnaire of Rozemeijer, that was asked from the interviewee

Purchasing performance is being measured mostly based on the purchasing plan and how the quality, cost and time requirements were filled. The interviewee mentioned that they are now developing the actual controlling processes and ability to make spend analyses.

According to the questionnaire of Schiele, the Construction Company's overall maturity average was 29% in Figure 32 it can be seen how values are distributed to the dimensions. The Yes-no –questionnaire of Rozemeijer gave the score 50% (5/10 "yes"-answers) and the estimate for Keough's model was between the "Coordinated purchasing" and "Cross-functional purchasing", giving the maturity percentage of 60%, prediction was that in two years the company would closer to the "World-class supply management" and be at the maturity level of 80%.

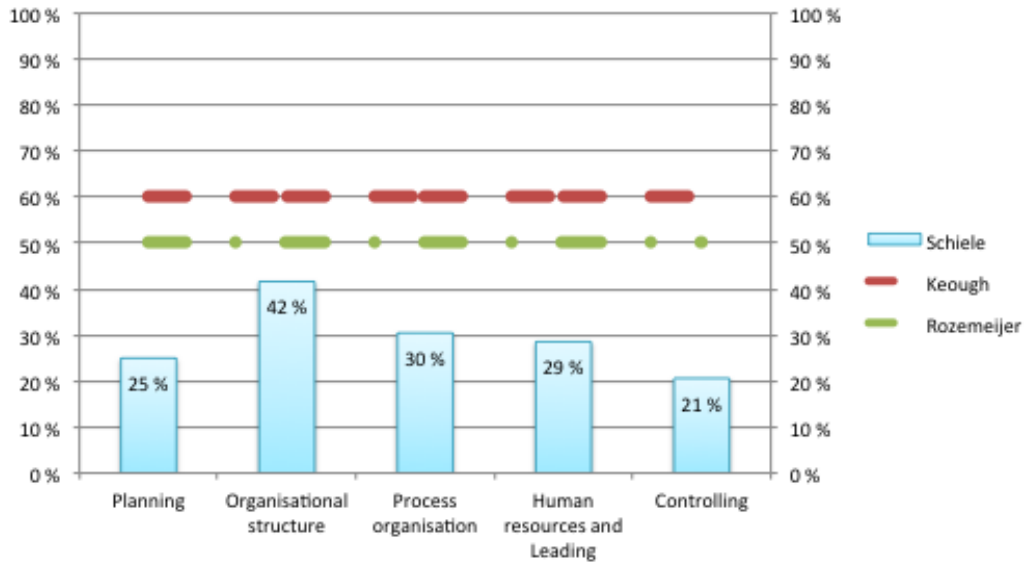


Figure 32: Interview results of the procurement director of the Construction Company

4.6.2 Analysis and suggestions

The Construction Company was growing aggressively and was now establishing processes for things that are not yet mandatory for the volumes they are handling. The procurement director was able to already recognise from the future improvements that were on its way, and state that in two years they will have "Cross-functional purchasing" practices in place. The only thing that is seen as important to keep in mind during these development projects is to build scalable and modular systems that can adapt the changes in the organisation and in the operative environment. Short-term decisions now can have harmful long-term effects.

5 Implications

5.1 Prelude

In the previous chapter, all the case companies were analysed and suggestions for improvements were given. For the reason of the heterogeneous sample of companies it is difficult to provide any generalisations on how the purchasing function should be arranged. Obviously, the more mature companies can work as a role model for the companies at the lower level of maturity, but the conditions are so different in all the cases that the applicability of every suggestion should be examined carefully for the current situation. Most of the research findings are about the phenomenon of purchasing maturity and the challenges that these companies are phasing.

First the applicability of the maturity models will be reviewed with findings from the cases. Secondly the maturity models are looked from the perspective of learning and understanding the phenomenon of purchasing. Thirdly, the constructed model is presented and finally the usability of purchasing maturity tests are evaluated and discussed.

5.2 The applicability of the purchasing maturity models for the case companies

The main benefit of using the purchasing maturity models for companies was the possibility to undergo all the important dimensions of purchasing. Going through the whole questionnaire provides a good overview of all the processes. If there is something that has been forgotten or in mediocre conditions, it can be taken as an action point for the future development projects. As for the interviewer, the questionnaire revealed weaknesses and issues that the industries are facing, those issues are described in the case descriptions and analyses. It is possible to get a quick introduction and a sneak preview to the ways how purchasing is done in these organisations by using a thorough questionnaire like Schiele's. Suggestions for improvements can be easily found in the questions that haven't been receiving high scores or by benchmarking the success cases from the other companies. The need for such improvement will be evaluated individually; best practices are not always suitable for all conditions. Some company might not for example have systems to analysing and crunching the purchasing data, but that might be useless if the company is small or if the costs to setting up and maintaining

the system would be higher than the actual benefit achieved. This case is common for the companies that are delivering customised products or projects.

5.2.1 Maturity and other attributes of the companies

The maturity levels have correlation with the overall processes of the company. It is rather obvious to say that companies having highly mature purchasing are performing better than the companies with purchasing at the lower maturity level. There is even scientific evidence found in the literature for that (e.g. Batenburg & Versendaal, 2008; Cousins et al., 2006; Paulraj et al., 2006). The purchasing function cannot develop if other functions are still operating in old-fashioned ways. In order to develop further as a whole, companies need to develop in all of the domains at the same time. If the sales function wants to serve the customers better, eventually they will have to get the purchasing staff to the new millennium as well. Even from this small sample of companies, it can be seen that the companies receiving high scores in the purchasing maturity interviews had other functions also operating in certain levels of sophistication. There was no company in the interviews that could be identified as driving the development of other functions through purchasing; it seemed that development of organisation and other functions ware driving the purchasing development.

The size of the company usually defines the need for systematic and sophisticated ways of working, in Figure 33 the global revenues have been added to the chart with the maturity test results, to illustrate the different company sizes within this case study. As the model presented by Greiner (1972, see Figure 8) suggests: as companies grow they face crises that can be solved by establishing new practices, that then are enabling the further growth. The size of the company therefore pushes the development of processes. The global revenue of the Healthcare manufacturer does not even fit to the scale of the figure, and no wonder it has almost the highest possible maturity level. The City is here an exception, even if the revenue is high it does not have high maturity level, but that can be explained with the different regularities of governmental organisations.

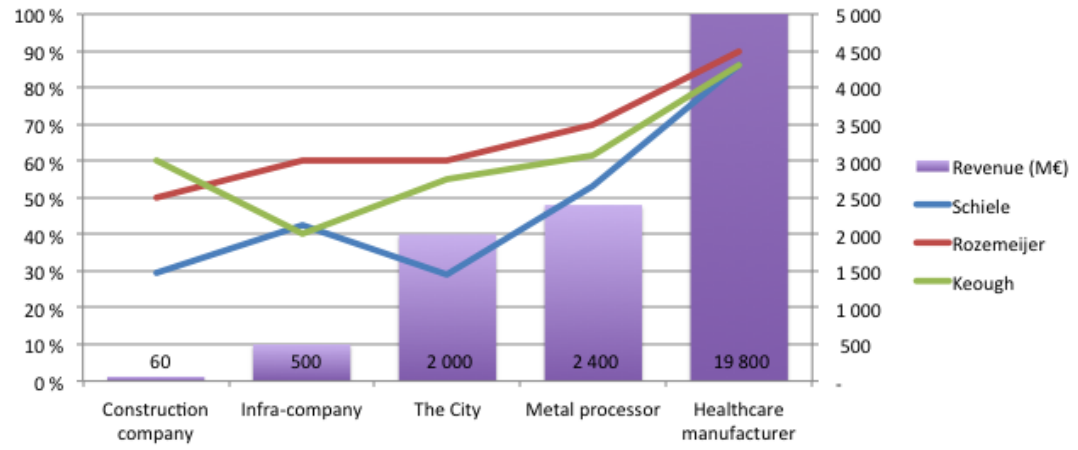


Figure 33: The maturity levels and the global revenues of the case companies

5.2.2 Why are these companies in these maturity stages?

One interesting point of view is to speculate the reasons why these companies are at these levels of maturity. The reason may be found in the history of the company, the industry, the nature of production or something else. While libraries are full of information about purchasing and the global consulting companies are offering their services to everyone, there are still plenty of companies that are not "yet" developed.

The size of the company seems to have correlation with the maturity level as was seen in Figure 33. As companies grow they will need to find unified ways of working, which leads to fact that then the roles and responsibilities are defined, whereas in smaller companies there is no need when the communication can occur more fluently. The different quality systems (e.g. ISO 9000) and regulations are also directing towards more systematic ways of working. The healthcare manufacturer is one example of a case like this, as the regulations are "forcing" the company to explicitly demonstrate what they are doing and what kind of suppliers they are using. The growing consumer awareness is forcing companies to focus more on their suppliers on social responsibility issues, for that reason purchasing has become an important partner also for the marketing and public relations. Companies can't afford to do leave purchasing "on its own".

The history of the company affects to the purchasing maturity, but it also affects the other departments of the company. Other departments like sales and operations have impact on the development of the purchasing function. The quality of the information and the mutually agreed processes are moving the function ahead in the maturity continuum, usually purchasing is not leading that development. Another thing is the

development that human resources (HR) department (one dimension of purchasing maturity) is pushing: demand for job descriptions, trainings and the performance appraisal plans. Usually request for things like these come from the HR or upper management, purchasing is involved but not leading the development neither in this area. Purchasing is not the only force driving development in the maturity continuum; other functions have a major role in that. Purchasing can have a pro-active attitude and orchestrate the development work but actually the framework for operating comes outside the purchasing function. This is one reason why purchasing needs to have its position in the executive board, so that it can push other functions to develop in a direction that can lead to the better handling of external resources. The inconvenient truth is that suppliers are responsible for great amount of value delivered to the customers and therefore managing them is important for the competitiveness of the company.

The nature of production is one element that is pushing the purchasing maturity forward. It is not a coincidence that case companies with factories are on the right side of the continuum and companies operating in the changing worksites are at the lower level of maturities. On the models of Keough (1993, Figure 12) and Van Weele (1998, Figure 13) the highest maturity levels are achieved by automotive, computer and consumer electronics. All these are representing mass production industries, where the production output amounts are large and by adjusting the process they can make influential savings. This leads to the tendency to develop processes, including purchasing processes. Processes from production are setting the targets for purchasing processes and therefore purchasing moves again towards greater maturity.

5.2.3 Findings of the study

The infra-company had problems with project organisations that are working independently and not understanding the benefits of the centralised purchasing organisation. The metal processor had the same problem before they started integrating purchasing closer to the business and giving more freedom to the projects. The ways of operating were adjusted to match the needs of the projects, so that the approach was at the same time top down and bottom up. The construction company's procurement director also had the supportive view on purchasing: " the task of purchasing is to tell projects what is good price". In some cases, the purchasing function might have to

consolidate volumes to get the companywide benefits that can cause short-term extra costs to the business units. These cases cause conflict of interests especially if there are no common goals in place for all; then own goals and agendas are usually prevailing. In these cases, the achieved benefits should be quantified and make sure that the targets of the business units will be adjusted so that they will not fail their own targets because of the companywide contracts. Exact data about costs and general effects clarifies the overall picture to all and prevents unnecessary frustrations like: “why buying this has to be slower, more difficult and expensive, when it could be done easily better”.

Changing the ways of working in purchasing requires change management skills. It was mentioned in several interviews that there are difficulties in changing the attitudes of purchasing personnel in the more proactive direction. Purchasing personnel is still seen in many organisations as being the guys that “didn’t succeed in production and couldn’t be assigned to sales” (quote from one interview). The field of purchasing is changing and the recognition towards that occupational group is getting better. Companies have started to understand its importance recently and are now focusing more on that. The purchasing professionals of the future are active in looking for new opportunities and better suppliers - all the resources in the world are in our use. This emphasizes the need for twofold structure of purchasing: operational (day to day tasks) and strategic (managing supply base), so that the “fire-fighter’s syndrome” will be avoided (Dubois & Wynstra, 2005).

Global sourcing has been an important trend in the 2000’s, just like the core competencies and outsourcing were in the 1990s. To exaggerate a little, in the 1990s and the beginning of the 2000s companies were outsourcing almost everything that was possible (In other words the non-core competencies), first to some specialist nearby and then later to Asia to get cheaper labour. This was then already part of the global sourcing phenomenon, better information connections and globalization allowed companies to look for new suppliers all over the world. The outsourcing trend caused later problems for the companies. The outsourced operations where actually more valuable than thought or then the expected benefits of outsourcing never took place. Especially the interviewees from the Metal processor company were saying that now the trend has been more towards insourcing and local-sourcing than outsourcing and global-sourcing.

5.2.4 Purchasing maturity is not one dimensional

The most of the maturity models presented in the literature are using one-dimensional scale, where there are four to six stages (see Table 4 for examples) representing all the steps of the purchasing development. It was however found in the interviews that placing company on the one-dimensional model is not simple. Especially when interviewees were estimating their maturity stage in the model of Keough (1993), they were expressing that they have some abilities from the higher and some from the lower levels. This same thing was noted with the results from the questionnaire of Schiele. The results from the interviews showed that the difference between maturity dimensions in one company can be even 30%, like in the case of the Metal processor (see Figure 27), the same thing was also seen in other case companies in a smaller scale. That indicates that maturity model would need to have more than one dimension. The same average could represent truly different purchasing functions, which could be demonstrated better with a larger sample of case companies. However in this study the averages are what actually matter on the level of needed exactness. The companies could be placed in order and it would be one illustration of a maturity model, as will be later presented in this chapter. It was seen from the results that the maturity levels that were perceived by the interviewees with simple tests (Keough and Rozemeijer) were relatively close to the maturity level that was possible to measure with Schiele's longer questionnaire.

5.3 Maturity model as narrative

Going through the different dimensions of maturity and reviewing the models from the literature provides a quick overview of the historical development of the purchasing function and states reasons why certain organisational choices are made and could be made. Understanding the past provides help for understanding the future. The maturity models are all presented to be cumulative in nature, so that the abilities that are at the lower levels should be achieved in order to get in to higher stages. This makes the maturity models useful in a narrative perspective; it reminds how things have been and how they have developed.

The key skills described in the model of Keough (1993) have the story of their own about purchasing development (see Table 11), which has elements that can be seen in the case companies:

Table 11: Themes and key skills from the model of Keogh (1993) (in Figure 12 the full model)

Theme	"Serve the Factory"	"Lowest Unit cost"	"Coordinated Purchasing"	"Cross-functional purchasing"	"World-class supply management"
Key Skills	Clerical	Cost analysis	National contracts	Supplier development	Selection of suppliers
	Logistics	Negotiation	Building purchasing database	Cross-functional problem solving	Relationship design
					Upgrading suppliers capabilities

Clerical, logistics, cost analysis and negotiations skills (in the first two levels) are the basic abilities that are required from the purchasing immediately after the function has been established. Even though those things are "basic stuff" the case companies still had problems in getting the proper price data collected so that it could be analysed beneficially. After these things are managed the model proposes that national contracts, purchasing database, supplier development and cross-functional problem solving could be implemented. Cross-functional problem solving is one of these complex issues that need organising and communication skills from the purchasing staff; supplier development needs understanding about the business logic and basics from the business development. The professional profiles at these two maturity levels are different. In the first one the purchaser needs to have basic clerical and negotiation skills; ability to do cost analysis is a good addition. On the latter one there is a need for broad understanding from different areas of operations, ability to holistic thinking and finding the best solutions for all. The leadership model is different at higher levels of development. Managers from the old ways of purchasing are not competent to lead the more proactive and collaborative organisations that the higher maturity stages represent.

In three of these cases there had just happened or about to happen major changes in purchasing department. The Metal producer had major restructuring in 2008, the new purchasing director was hired to corporation and the financial situation had forced functions to collaborate more to squeeze savings wherever possible. The healthcare manufacturer had new global purchasing director about five years ago, which changed the direction and focus of the purchasing "from combative to cooperative". The

Construction company had just hired new purchasing director, and she was about to take over the operations and plant better ways of working to the company before the people regress to the industry's low level of standards. It is pointed out in the literature many times (e.g. Ellram & Carr, 1994; Kraljic, 1983; Monczka & Trent, 1991; Paulraj et al., 2006) that the purchasing needs a mandate to operate and change the old ways of working in order to actually provide the value to the whole process. The clear vision and leadership skills of purchasing director are important part of the change.

In some cases, the change is happening through revolution, as in the organisational development model presented by Greiner (1972, see Figure 8) the growth produces problems that need revolution to be changed. The centralisation versus decentralisation is one of these discourses that usually arouses when companies grow. The maturity model of Keough (1993) and Van Weele (2005) both take a stand on the organisational structure discussion, both of these suggest that immature purchasing has fully decentralised organisation. The first sights of the maturity development are purchasing centralisation, taking the control of the spend in the corporation and getting the cost advantage through volumes and standardisation. At the highest levels of maturity, the purchasing organisation is suggested to be centre-led, so that purchasing is at the same time "where the business is done" and controlled by the central organisation. It was seen from the cases that the problems with the centre-led structure came from the difficulties of substantiating the need to "decentralise" some categories. Before the centralised purchasing can give the control back to the divisions or units, it needs to achieve it first. If the processes and ways of working are not in coherence between divisions and units, the centre-led model will have difficulties in operating with all the heterogeneous requests. This is the same remark that Rozemeijer et al. (2003) has made; the most suitable organisational structure for purchasing depends on the corporate coherence and purchasing maturity (see Figure 9). Kraljic (1983) already mentioned in his famous article that only strategic items should be centralised and others should be more or less decentralised (see Table 1 for four basic supplier strategies).

5.4 Forming the maturity continuum in the light of these cases

All the results (from Schiele's questionnaire) of the study have been gathered into Figure 34 to illustrate the different maturity levels that the case companies represent. It can be

seen that these companies have all different kinds of maturity profiles; only generalisation that can be drawn from this is that organisational structure seems to be in most cases in higher maturity stage than other dimensions. There is no other pattern occurring that could be identified with this amount of cases.

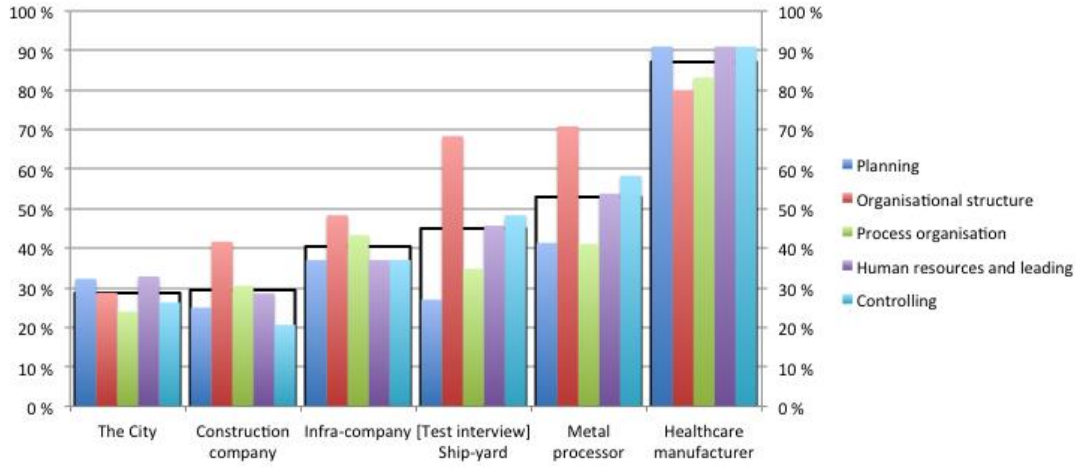


Figure 34: The maturity tests and results in the case companies (only results from the test of Schiele are presented)

To form a big picture about research findings, four different maturity levels were formed from the interview results that are presented in Figure 34. It is acknowledged that the sample of cases is not big enough to form a completely new maturity model, as a baseline Keough interviewed about 150 companies around the world to form his model in 1993.

The Finnish purchasing maturity model 1.0

The first cluster is the City and the Construction company, which are both representing the basic purchasing function that is cost driven and just serving the other functions to keep the business running. It is attributable to this stage that purchasing is not recognised to produce any important value to the company. Van Weele (2005) places these industries both at the beginning of the maturity model in Figure 13, public utilities being completely in "serve the factory" segment and construction between that and "reduce cost". The construction company that was introduced was still in a growth phase so it is not representing the industry as well as some more established construction companies. To combine ingredients from different maturity models this stage could be named as: **cost-driven and passive purchasing**. The main task of purchasing in this stage is to get what is asked (passive) and with low costs, if possible.

The performance is measured against budgets that are collectively decided or based on the previous year's figures.

The second cluster has two companies: the Infra-company and the shipyard (the test interview). They represent the slight development from the cost oriented passive purchasing: the organisation is formed and the processes are in place to ensure better purchasing and collaboration with other business units, the operations are still mainly cost oriented but some synergies are looked between different projects. There are systems for pooling the demand between different units but they are not fully in use. Purchasing is still struggling to get the recognition from the management. This stage is called **capable purchasing** (quoted from Cousins et al. (2006)). It means that purchasing is capable of performing various advanced processes, but has not yet managed to take them fully into use.

The metal processor represents the third stage of maturity in this study. It has established companywide processes and organisational structure is supporting the cross-functional collaboration. Purchasing is integral part of the projects and suggesting new suppliers and solutions when possible. Purchasing is recognised to have important impact on the value creation and it is reporting directly to the top management. This stage can be called **strategic and coordinative purchasing**. Coordinative character comes from the way purchasing is organised; it is coordinating the activities between the internal and external networks. Strategic nature comes from the way that purchasing is actually seen as important contributor to the competitive advantage and the decisions are following the sourcing strategy.

The healthcare manufacturer represents the final stage of maturity in this continuum. It has all the processes in detail level and the purchasing is truly integral part of the product development, operations and marketing. Purchasing is globally oriented and the global sourcing organisation ensures that best choices are made for the project using all the possible resources available. Top management recognises purchasing as important contributor to the competitive position. This final stage is named to be **Global and value-chain oriented purchasing.** The processes of this company represent the World-class level, all the suppliers are evaluated and reviewed regularly and there are also processes for developing the suppliers in place. The function is not optimizing itself; it is making the choices that produce most value for the end-customer and the company.

Figure 35: The Finnish purchasing maturity model 1.0

Figure 35 illustrates the maturity model that was constructed based on the received results, it retells the same thoughts and ideas that all these maturity models presented earlier do, but from the perspective of this study. The inspirations to the names of the maturity stages are taken from Table 4. It concludes the findings from the case companies into this one figure.

5.5 Findings from the questionnaires

There were three different maturity tests used in the interviews: Schiele's *maturity profile instrument* (2007), Rozemeijer's *list of questions to determine the maturity of the purchasing organisation* (2000) and Keough *procurement development model* (1993). Next there will be some comments and findings about each of those tests used in this study.

5.5.1 Schiele's maturity profile instrument (questionnaire)

The maturity profile instrument (or just questionnaire) of Schiele has 56 questions but 52 questions were used in this study. Overlapping questions and one question that was not relevant to the study was removed from the interview structure. Going through all the questions with interviewees took about 90 minutes, depending on how loquacious the person interviewed was. Going through the questionnaire was mentioned by the interviewees as being a good way of examining the dimensions of purchasing and seeing the purchasing in new perspective.

For small companies like the Construction company, the questionnaire did not fit that well. The questionnaire is made for the companies that already have several people working in purchasing or some kind of purchasing organisation established. The two-hour interview using this questionnaire structure with the company gave good insight

into the ways of operating and the possible weak points of the purchasing practices they use. Even though the healthcare manufacturer was almost at the highest maturity level, there were still some points found that could be improved to establish higher maturity level.

Unfortunately there were still some questions that were slightly irrelevant to most of these case companies: for example the supplier technology roadmaps are not really that visible or existing in infra- or construction industry. It has to be noted that the questionnaire of Schiele is designed primarily for "the medium- to large-sized producers of metal parts with employees between 1000 and 2000" (Schiele, 2007). Also it was seen that in order to be able to answer the "right way" to all these questions, the interviewee should have understanding about the purchasing theory and about the common practices, at least it would help. Answers from the purchasing professionals were different than from the business, law or production oriented people. The answers of the metal processor company's interviewees illustrate this quite well, in Figure 28 (figure where the results of three interviews are in one chart) it was seen that the closer the person is to production the lower the perceived maturity level is.

5.5.2 Rozemeijer's list of questions to determine the maturity of the purchasing organisation

Rozemeijer's "yes-no" –questionnaire was simple and good, its strengths were absolutely its exactness in answers (yes or no) that allowed easily quantifiable and comparable results from the companies. The results were easily quantifiable but the questions proved to be too vague, so that even inside the companies there were conflicting answers and in some questions the answers were: "on the other hand it is yes, but then on the other it is no". There were four questions, that almost everyone answered "yes", these were about: purchasing recognition, reporting directly to top management, truly cross-functional processes and achieving the lowest total cost against the highest value (respectively questions 2,3,4 and 5, see questions in Table 6). Rozemeijer's list of questions is a really simple maturity test but that is also its purpose: just to do quick analysis that can be used to lead the conversation and decision-making (see Chapter 2.4.1 for more about the questionnaire and the study).

The test could also be used to explain the concept of the purchasing maturity, these ten questions basically define the way that purchasing organisation should be to achieve a high maturity level. The abilities that this test appreciates in purchasing are: ability to increase the share of external resources, recognition within the company, cross-functionality, a holistic view on costs, ability to standardise, unified processes and skilful and talented people. These same themes are present in all other models as well so this could be seen as a quick introduction to the important aspects of purchasing. If the answer is "no" to some of these questions, there should be at least some reason why that should not be changed.

5.5.3 Keough's procurement development model as a basis for estimation

The procurement development model of Keough is already 20 years old, but it is still usable when developing the purchasing function. The model was unknown to all of the interviewees, but all of them were able to estimate where their purchasing would be in that continuum. Estimating the stage from the model works as a good starting point for the conversation about the state of the purchasing. It reveals how the interviewee sees the status quo, or it reflects what his/her perception about that is. This point, on the other hand makes the results really subjective, and differing among the interviewees. It can be said that the method is not very exact, but it is good for personal or internal use within the company. Newly signed purchasing director could start his work by assigning this task to all the people working within the purchasing. It was seen from the results (Figure 36) that the estimate for the maturity level from Keough's model was higher than questionnaire results in all but the infra-company.

5.5.4 Identifying the stage of development in purchasing

When the results were compared from five case companies, it was seen that the results from Keough's and Rozemeijer's tests are all the time in the higher stage of maturity than the results from Schiele's questionnaire, Figure 36 illustrates this. In order to draw scientific conclusions about these graphs, there would need to be more case companies in the study. It seems that when the maturity stage is higher the difference between these answers is smaller, this means these models have consensus on what is mature purchasing, but not really what kind of purchasing is at the bottom of the continuum (immature purchasing). On the other hand it is hard to believe that some company

would place themselves on the lowest step of the maturity model and basically unveil that they are not doing the right things at all.

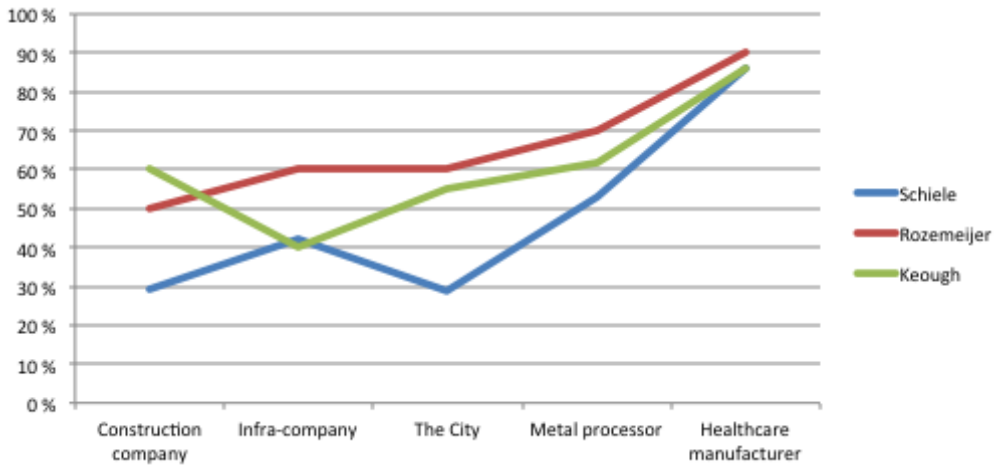


Figure 36: Results of the cases (all the tests conducted in the interviews)

6 Conclusions

6.1 Conclusion and research questions

The *raison d'être* of the Master's Thesis is to answer the research questions and to produce new scientific knowledge. The answers to the research questions have been provided during the thesis and especially in Chapter 5, but here are short answers to all of these questions, the new knowledge emerges throughout the thesis.

What is the applicability of the purchasing maturity models presented in the literature for the case companies?

Purchasing maturity models are applicable to development use when the need for development work is evaluated. The models are used to find out where the companies are in the maturity continuum. The case companies that were in the higher stages of maturity were aware of the situation better than the companies in the lower stages. This can be seen when comparing the results from the models of Keough and Rozemeijer (perception of the maturity level) to Schiele's model (the "actual" level of maturity) in Figure 36. Understanding the current position in the development path (maturity model) helps planning the future and understanding the reasons why some more advanced procedures are not taken into use. All case companies were able to identify processes that could be improved during the interviews.

How can the stage of development/maturity in purchasing be identified?

There were three ways of measuring the maturity stage that were used in the study: Schiele's *maturity profile instrument* (2007), Rozemeijer's *list of questions to determine the maturity of the purchasing organisation* (2000) and Keough *procurement development model* (1993). Chapter 5.5 describes the pros and cons of these methods in more detail. Anyway the identification of the absolute stage is extremely difficult and even after an extensive analysis of the company the results are still having subjective elements. The questionnaire of Schiele (2007) is a very good structure for interview, but even with the two hours interview used here there was still deviation between the results. However it allowed identifying the maturity stage on the needed level of exactness for the company. In Figure 37 all the results of the study are presented in one

table (including all the questionnaires), this is the exactness of how the results can be presented.

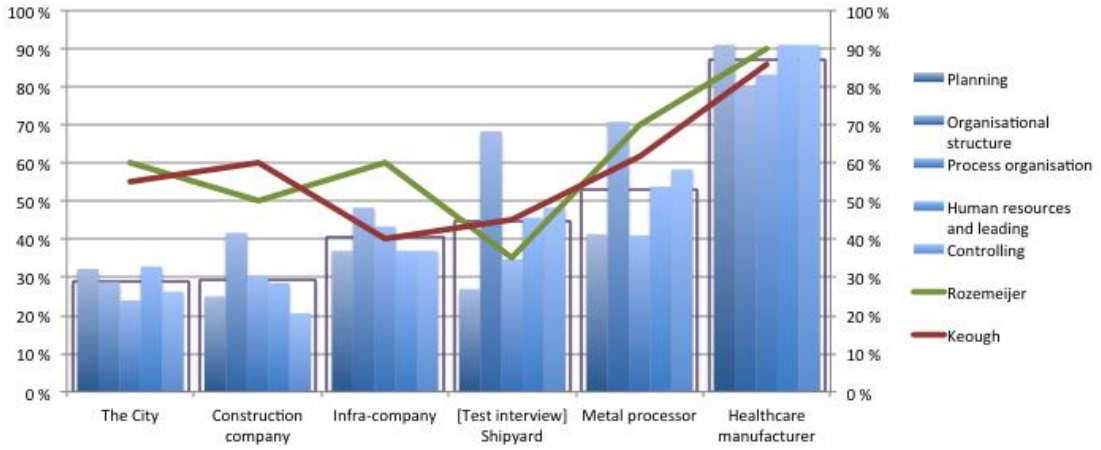


Figure 37: All the interview results presented in one figure

How can maturity models be used to develop purchasing and supply management?

Maturity models offer help when figuring out what kind of processes and abilities the purchasing function should have. The maturity models are describing the path to the excellence, and assimilating the content of any purchasing maturity model provides one view of how things should be organised. Newly hired purchasing director could use these simple tests around the function to receive feedback from the colleagues about the state of the purchasing function. Maturity models are at its best in learning purposes.

6.2 Considerations for future research

Because of the explorative nature of this study, there are multiple ways how this research could be continued. There were many interesting topics that arose from the interviews that could be elaborated more. All these interviewees were experienced purchasing (or sourcing) professional and the anecdotes they told had many very good points that could be new research topics.

The sample of the study was relative small in comparison with the works that other purchasing maturity researchers have done. The Cross-case analysis showed that comparing companies from different industries can provide only benchmarking benefits for the new processes and ways of operating. It would be interesting to examine how the development of operations in other functions is affecting on the purchasing

maturity. The hypothesis, that was already mentioned, is that other functions drive or facilitate the development of purchasing. That would give the answer to the question of when is it desirable to start developing purchasing, or should the resources be directed to the development of other functions. Another interesting correlation to examine is how the external measures (such as revenue, profit margins, amount of employees, market growth etc.) correlate with the level of purchasing maturity in the company in different countries and industries.

One direction for future research would be developing the maturity profile instrument of Schiele (2007) so that it could be used in research of different industrial environments in different countries. That would make possible wider purchasing maturity audits that could help finding more dependencies on the purchasing development. It would be also fruitful to be able to form a lighter version of the audit that could be assigned for a larger set of companies every couple years to see how purchasing functions have been developing during the time. This study presented the current state of maturity in these companies interviewed, the same research could be conducted for these companies after two years to see if the things have been changing towards better or worse.

6.3 Reliability and validity

According to Yin (2009) the reliability and validity of cases can be judged by four dimensions, these are: construct validity, internal validity, external validity and reliability. There were actions done to enhance construct validity, internal validity and reliability in this study. Internal validity was not tackled because of the nature of this study. That is important in the explanatory and causal studies, but not for the explorative and descriptive studies that this represents (Yin, 2009). The steps to improve the reliability and validity of this study has been presented in Table 12, where all the actions towards better quality research have been listed according to the criteria it represents.

Table 12: Tactics used to improve reliability and validity

Criteria	Actions to improve in this study
Construct validity	• All interviews were recorded and transcribed • The interview analyses were approved with the interviewees • In three cases there was more than one person interviewed
Internal validity	• Not tackled due to the nature of the study
External validity	• Five companies from different industries were studied • Three methods used per interview
Reliability	• All Interviews followed the same structure that was proven to work by test interview and Schiele (2007) • Triangulation of methods to measure maturity was used • A case database was maintained for interviews and quantified results

Triangulation methods can be listed to include triangulation by data source, the research method, researcher and data type (Miles & Huberman, 1994). In this study all of these triangulation methods except the researcher has been used: data source by interviewing different people in the organisation; the research method by using three different maturity measurement methods (Schiele, Rozemeijer and Keough) and the data type came through using different methods for the same purpose.

The limiting factor for the generalizability of this study is the number of the cases studied and the amount of people interviewed per company, this increases the opportunity for bias in the results (Voss, Tsikriktsis, & Frohlich, 2002). In order to get more reliable results, there should be at least two companies per each industry and each level of maturity, but for this explorative research the amount of cases was enough to find out the usability of these maturity tests. Other point was that most of these people interviewed had a purchasing background and therefore they were probably biased to give subjective views about how things are working. The questionnaires included questions where the personal views affected to the results; this was seen particularly from the results of the metal processor (in Figure 28 in chapter 4.3.2).

The interview method affected the reliability of the results, in the study of Schiele (2007) the maturity audit performed per each company was done in more detail than in this

study: per each company they interviewed the head of purchasing for 6-8 h, had two 2-3 h validating interviews with other purchasing personnel and in addition several 1-2 h interviews with the heads of other relevant departments (R&D, production, logistics, quality, marketing). They also viewed existing IT systems, process documentation and other materials to get the maturity profile as precise as possible. In this study, the idea was to use the light version of this method and see what kind of implications could be find interviewing different companies than in the study of Schiele. This may have cause some bias in the results, which can be seen in the deviation in the results from the same company (the City and the Metal processor).

6.4 Epilogue

The deeper you dive in the research of purchasing, the more you start to believe that purchasing is the key to success for every company, to quote Abraham Maslow (1966): "I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail". Purchasing is not solution for everything and after all it just a support function for the business. That doesn't mean that it would not be important: *purchasing is too important to be left to the purchasing department.*

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Appendix 1: The interview structure:

Schiele's maturity profile instrument (2007) and Rozemeijer's list of questions to determine the maturity of the purchasing *organisation* (2000)

	Management function	Questions for analysis	% Observed	Stage 1 (0 - 25%)	Stage 2 (26 - 50%)	Stage 3 (51 - 75 %)	Stage 4 (76 - 100%)	På Finska	Kommentit
PL	Planning								
PL1	Demand planning							Kysynnän suunnittelu/ennustaminen	
	Process	To what degree is purchasing involved in the project / product demand planning? Is this a documented and revolving process?		Product or project planning is sporadically known to purchasing	Dedicated purchasing personnel are informed about product or project planning. Purchasing has access to demand planning systems.	Purchasing is integrated into product and project planning and utilises existing demand planning systems. Purchasing inclusion points are defined in the process documentation	Early involvement of purchasing in product and project planning is always ensure. Planning results are an integrative component of the purchasing strategy.	Millä tavalla hankinta on mukana projektien/tuotteiden kysynnän suunnittelussa?	
	Assessment of demand	Where are requirements and demands derived from? How is the process described?		Demands are partly derived from sales or order income prognosis/forecasts	Demands are derived from sales or order income prognosis/forecasts and planned for significant commodity areas	Demands are derived systematically and in structured fashion from sales or order income prognosis/forecasts. Procurement market facts are remedially considered	Pro-active demand control on the basis of **procurement market facts** and **product life-cycles** (Product Lifecycle Managment)	Millä tavalla kysyntätieto ja tilaukset saadaan hankinnan tietoon? Mistä? Kuvaile prosessia.	
PL2	Pooling planning							Hankintojen yhdistely	
G	Planning	Are commodities analysed for groupe-wide pooling potential? Does this regularely happen to all commodities?		Occasional analysis of selected commodities	All commodities are analysed based on commodity code data	Complete purchasing volume is permanently analysed in regard to pooling opportunitites. Results are documented	Future demands are analysed regularly and systematically in respect of their pooling opportunities. Cross-functional partners are involved	Miten divisioonien välisten hankintavolyymien yhdistelyä analysoidaan?	
G	IT Support	Which IT-tools support you when analyzing and managing poolable demand?		Insufficient application of IT tools for pooling (e.g. Excel or similar IT-Tools)	Application of a business unit wide IT tool for pooling	Application of a uniform IT tool for group-wide pooling	Application of an integrative intranet based IT tool for corporate pooling. Intranet based preferred parts and preferred suppliers database used cross-functionally	Millä tasolla IT-järjestelmät tukevat volyymien yhdistelemistä ja sen analysointia?	
G	Mandates	How are negotiation mandates and responsibilities defined? Are there group-wide procedures established?		Regulation of negotiation mandates and responsibilities is planned	Negotiation mandates and responsibilites are partially regulated for single commodities	Negotiation mandates and responsibilites are regulated. Process applied for all commodities	Negotiation mandates are delegated and responsibilities are clearly defined on a global basis. Mandates are actively applied	Kenellä on lupa neuvotella sopimuksia? Millä tavalla neuvotteluvalta jaetaan? (jollain selkeällä tavalla?)	
PL3	Environment Scan							Hankintaympäristön seuraaminen	
	Process	How is the process of a supply market analysis described and documented?		Process is described unsatisfying	Process is partially described	Process is documented and applied	Process is subject to regular reviews. Cross-functional acceptance and commitment	Millä tavoin toimittajamarkkina-analyysiä tehdään? Onko se kuvattu ja dokumentoitu prosessi?	
	Resources	Is sufficient personnel allocated to market analysis?		Provision of personnel capacity for supply market analysis is limited available	Sufficient personnel for market analysis is available. Responsibilities and commodity groups are defined.	Own capacities for market analysis are derived out of the planning process and are available for market scann activities	Capacities for market analysis (own and where necessary bought) are available. Crossfunctional partners can be involved if required	Miten resursseja on käytössä toimittajamarkkinoiden seuraamiseen?	
	Cross-functional integration	How are partner functions involved in drawing conclusions out of the analysis results?		Results out of the supply market analysis remains mostly at purchasing	Less active exchange with other process partners (e.g. Engineering, sales)	Regular information exchange process with partners (e.g. Engineering, sales)	Exchange of market analysis results occur continuously and protected against non-authorised use	Miten muut funktiot ovat mukana toimittajamarkkinoiden seurannassa?	
PL4	Innovation planning							Innovaatioiden suunnittelu/teknologioiden seuraaminen	
	Technology identification	How do you keep track of technology trends? Is there a formal process of technology monitoring?		Purchasing **reactively** follows procedures of process partners (e.g. Engineering, sales)	Purchasing presents remedially information about technology trends to their partners. Technology monitoring is part of purchaser's responsibilities	Purchasing acts pro-actively following established **processes**	Purchasing supports systematically product or technology development. Information about technology trends will be used through cross-functional partners	Millä tavalla hankinta tutki teknologiatrendejä ja jakaa siitä tietoa?	

	Technology roadmaps	Do purchasers know the **technology roadmap** of your company and your suppliers? Is there a methodology of correlating your technology roadmaps with those of your suppliers?		Own product and technology roadmaps partially known	Own product and technology roadmaps are known, those of strategic suppliers are partially known. Responsibilities for roadmap-analysis defined	Process of matching own product and technology roadmaps with the roadmaps of significant suppliers	Implementation of harmonised product and technology roadmaps with selected suppliers, cross-functionally agreed	Miten tunnetaan omat ja toimittajien teknologia roadmapit? ..Ja miten ne on otettu mukaan omaan toimintaa?	
OS	Organisational structure							Organisaatiorakenne	
OS1	Structure & Mandates							Rakenne ja vastuunanto	
	Organisational structure	Is a purchasing organisation established? Are responsibilities defined?		Purchasing responsible people are named. Purchasing organisation is insufficiently established	Purchasing organisation is formally in place	Purchasing organisation is established and is in charge of all procurement activities. **Procurement policy** is described and communicated via internal circular letter as mandatory	Purchasing organisation is continuously further developed based on business strategy, benchmarks, interviews or process reviews	Minkälainen ostoorganisaatio on ja miten se toimii? Onko vastuut määritelty?	
G	Mandate	Is purchasing responsible for **all procured goods and services?** Do you have regulations for sanctions in case of non-complience?		Many commodities are not managed in responsibility of purchasing	Purchasing initiates programs and measures for mandating procurement fields. Penetration >50%	Purchasing has the mandates for complete purchasing volume defined mandatorily and communicated. Penetration >80%	Regulations for sanctions in case of non-compliance are introduced. Penetration ca.100%	Onko hankinta vastuussa kaikista hankinnoista? Onko politiikan vastaisista hankinnoista olemassa sanktioita?	
	Cross-functional integration	Are interfaces towards partner functions defined? Are they cross-functionally agreed and responsibilities defined?		Interfaces of purchasing are known and tasks are partially described	Interfaces are cross-functionally agreed for isolated function. Respective tasks and responsibilites at the partner functions are known	Tasks and responsibilities are coordinated with all interfaces according to company wide defined processes, and are described in a **guideline**	Purchasing drives **continuous improvement** and the definition of interfaces and guideline	Onko rajapinnat muihin funktioihin määritelty? Onko ne sovittu yhdessä muiden kanssa?	
G	Integration into group	How is purchasing integrated in the purchasing network of the group?		Purchasing acts locally without exchance with other purchasing departments	Purchasing remedially exchanges information with other purchasing departments	Purchasing is an active part of the group-wide procurement network	Purchasing is integrative part of the worldwide procurement network of the group	Miten osto on mukana groupin ostofunction ja muiden divisioonien oston kanssa?	
OS2	Strategic integration							Integraatio strategisiin päätöksiin	
	Board meetings	Does purchasing director take part in board meetings?		Purchasing director participates occasionally in the board meetings	Purchasing director is permanent member of the **board committee**	Purchasing director is permanent member of the **executive committee of the business unit**	Purchasing director directly report to business unit executive managment (CEO/CFO)	onko mukana johtoryhmissä/hallituksissa? Kenelle raportoi?	
	Make-or-Buy decisions	Is purchasing involved in all make-or-buy decisions? Does purchasing take part at core competency definition and strategic decisions?		Purchasing is **informed** about procurement related aspects in make-or-buy projects. Core competencies of the businee units are defined, but without purchasing involvement	Procurement involved in major make-or-buy decisions. Core competencies of the business unit are detailed, documented and published	Purchasing is involved in all make-or-buy decisions and **influences** the definition of core competencies, as part of strategy definition	Purchasing is an integrative part of the make-or-buy decisions. Purchasing tasks are documented and cross-functionally accepted. Potentials for optimisation of the depth of own value added are indicated along the product life-cycle	Millä tavalla mukana teko-tai-osto päätöksissä? Ottaako osaa keskusteluihin firman ydinosaamisesta and strategioista?	
PO	Process organisation							Prosessit	
PO1	Sourcing strategy							Hankintastrategia	
	Sourcing strategy	How would you describe your sourcing strategy? Is it documented and known to your partner functions?		Definition of a sourcing strategy is in progress	Sourcing strategy is documented and applied for all major material groups	Sourcing strategy is derived out of corporate strategy, cross-functionally agreed, documented and agreed	Sourcing strategy is defined as a roadmap, regularly updated, adjusted to corporate strategy and tied into target agreements. Key issues of the competitors sourcing strategies are known and documented	Miten sourcing strategia on määritetty? Onko dokumentoitu millä tasolla? Ja tunnetaanko kilpailijoiden strategiat? (sourcing strategia=miten ja minkälaisia toimittajia valitaan)	

	Process supplier selection	Is supplier selection carried out systematically and according to requirements profile and selection criteria? Is the selection process well defined, logical and documented?		Supplier selection process is not or only partilally described	Selection process is defiend and cross-functionally applied. Supplier selection occurs systematically based on requirement profiles and selection criteria	Selection process is completely applied. Supplier decisions are traceable documented (e.g. Quotation comparison sheet)	Supplier selection is based on complete application of insights and decisions throughout the company (e.g. Pooling organisation, supplier evaluation results etc) Selection process is continuously adjusted to latest requirements of the business unit		Kuinka toimittajan valintaprosessi on järjestetty/dokumentoitu? Kerätäänkö tietoa myös muita funktioilta?	
	Responsibility	Who is responsible for supplier selection?		Purchasing is not or only partially involved in supplier selection	Purchasing supports supplier decisions	Purchasing is process owner for the supplier selection process	Cross-functional decisionmaking committee (e.g.Sourcing Committee) is in charge of the supplier selection process		Kuka päättää uusista toimittajista? Miten vastuut on jaettu?	
PO2	Supplier selection								Toimittajavalinnat	
	Negotiation	If preparing a negotiation, do you follow a uniform and systematic approach? Are decision criteria, tactics and targets agreed cross-functionally?		Less negotiation preparation	Systematical preparation approach. Negotiation targets are explicitly defined and documented. Customer requirements are considered in the negotiation strategy	Cost structures of suppliers are analysed. Procurement relecant consequences from possible negotiation results are analysed and evaluated. Negotiation targets are methodologycally deducted and explicitly defined. Process is described	Future influencing factors on cost structure of suppliers are considered (cost reduction potentials, market prices funding etc.). In the case of awarding high-volume contracts, structured negotiation strategics are applied. Decision-making criteria are accepted cross-functionally		Tehdäänkö valmistautuminen neuvotteluihin prosessimaisesti? Miten päätöskriteerit, taktiikat ja tavoitteet sovittaan muiden funktioiden kanssa..	
	Contract management	Do you have contract managment function in your organisation and what are its activities?		Tasks are hardly described and is covered within other responsibilities. No application of standardised contracts	Task are isolated, described contact partners are known. Application of company wide and existing standards	Task is pursued by responsible persons and shows first results. Application of standards under group wide adoption and own strcuture (e.g. Contract configurator)	Function is an established interface between cross-functional partners and purchasing. Functions significantly drives and determines contract management issues. Group wide standards are communicated and are validly applied		Miten sopimuksia hallitaan? Onko olemassa siihen erikoistunut funktio	
PO3	Supplier Evaluation								Toimittajien arviointi	
	Process	Is there a systematic procedure for supplier evaluation in place?		No	less than 60% of the purchased volume is evaluated according the process	60-80% is evaluated	more than 80% of purchased volume is evaluated		Onko käytössä systemaattinen tapa arvioida toimittajia? Kuinka laajasti käytössä?	
	Communication with supplier	Are evaluated results communicated to suppliers? on a regular basis?		Sporadically communicated (e.g.during price negotiations)	Evaluated suppliers are promply informed about the evaluation results. Results are internally recorded (e.g. Central database)	Evaluation results are discussed with selected suppliers in a cross-functional team	Evaluation results are discussed with selected suppliers under involvement of the management		Miten arviot kommunikoidaan toimittajille? (kts.kysymys alla funktiosta)	
	Responsibility	Do you have supplier management function in your organisation?		Supplier management function is hardly existing	Function is documented and implemented	Function is implemented as described and is actively managing the supplier management processes	Function is an established interface between cross-functional partners and purchasing, drives application of agreed supplier strategies and reports relevant results (e.g. Cost reduction contribution to business)		Toimittajien seuranta funktio olemassa? Miten järjestetään?	
PO4	Supplier development								Toimittajien kehittäminen	

	Process	Is there a systematic procedure for supplier development in place? Is the process described and communicated within the company?		defined individually	planning process documented is existing for all substantial suppliers	The supplier development process is defined. Supplier development plans are derived from the supplier evaluations and are implemented	development process is implemented and regularly updated. Development plans are harmonised across the organisation and derived from the supplier development strategy. Communication of all results is ensured	Onko olemassa systemaattinen tapa kehittää toimittajia? Ja onko roolit määritelty?	
	Optimisation	Do you visit the sites of your supplier on a regular bases? Do you perform trainings and workshops with your suppliers?		Selective visits at suppliers	Periodical realisation of trainings and workshops at the supplier	On demand internal/external resources are available to support projects, training and implementation	Professional consulting projects and training take place. Resource for consulting are permanently provided for respective projects. Joint continuous measurement of developemtn success with suppliers	Käydäänkö toimittajien luona säännöllisesti? Järkätäänkö työpajoja?	
	Phase out	How would you describe the supplier phase out process? Who decides about phase out?		Suppliers will be phased out based on subjective criteria	Responsibilities for phase out decisions are defined	Phase out strategy exists. Process with defined criteria is described	Consequent application of phase out strategy, cross functionally agreed	Miten hoidetaan "vaiheittain käytöstä poisto" eli phase out toimittajalle? Onko olemassa prosessi ja ketkä päättää?	
PO5	Purchasing early involvement in development processes							Hankinnan osallistuminen tuotekehitykseen	
	Process and roles	Does the process follow a documented path? Are tasks and responsibilities well defined within the overall process?		no process exists, purchasing is not considered within the product development process	process described and responsibilities defined. Involvement and tasks of purchasing are documented within the product development process	Process synchronised with the product development process. Responsibilities are clearly documented. Process targets are defined and responsible persons measured at these targets	Product development processes are compared and continuously improved by benchmarks of business units/other companies	Onko prosessi olemassa ja dokumentoitu? Onko vastuut ja tehtävät hyvin määritelty koko prosessissa? (hankinnan osallistuminen tuotekehitykseen)	
	Cross-functional integration	How is purchasing involved in the product development process?		Purchasing is sometimes invited to team meetings by the engineering team	Purchasing is integrative part of the cross-functional engineering team during the **design phase**	Purchasing is integrative part of the cross-functional engineering during the **concept phase**	Purchasing is actively involved in the **idea phase** (e.g. Concept workshops) and supports product- and program planning in respect to feasibility of product ideas	Miten hankinta on mukana tuotekehitysprojekteissa? (missä vaiheessa: idea, konsepti, suunnitelu)	
	Standardisation	Does purchasing pursue consequently measures to reduce complexity of products, processes and sourcing procedures?		Standardisation is not consequently considered within the product/project development process	Purchasing influences consequent reduction of unncessary complexity of components, processes and sourcing structures	Defined standards (e.g. Modules, component, catalogues) suppliers per product/service resp. Technologies are applied	Basic concepts of standardisation (e.g. Product platforms, modules) are defined cross-functionally together with purchasing	Millä tavalla osto tavoittelee kompleksisuuden vähentämistä, tuotteissa, prosesseissa ja hankintaprosesseissa? (mieti miten lausut)	
PO6	Early Supplier Involvement process							Toimittajien osallistuminen tuotekehitykseen	
	Early Supplier Involvement	To what extent are suppliers incorporated into the phases of product development?		Less involvement of suppliers	Suppliers provide regular focused and comprehensible input. Preliminary value added stage are explicitly considered	Suppliers are systematically involved following a defined process. Development capacity of the supplier (resident engineer) is used on demand	Suppliers are integrated on the basis of total cost of ownership criteria. Simultaneus engineering/joint project management with the supplier occurs on demand	Millä tavalla toimittajat ovat mukana tuotekehityksen eri vaiheissa?	
	Technology roadmaps	For which suppliers do you have their technology roadmaps accessible?		Technology- and market strategies of the own product and services portfolio are known	--II--	Technology and market strategies of the suppliers product and service portfolio are known and occasionally adapted to own ones	Technology and market strategies of the suppliers product and service portfolio are mutually adapted into substantial commodity groups	Kuinka monelle toimittajalta on teknologiasuunnitelma? (toistoa..)	

	Involvement marketing	Is purchasing acquainted with marketing strategies and relevant markets? Is purchasing familiar with key customers?		Marketing stragies are partially known in purchasing. Integration depends on single persons	Existing and future marketing strategies are known in purchasing	Purchasing influences marketing strategies or sales prognosis by provision of procurement market know how following a regular process	Purchasing is integrative part in the development of marketing strageies and sales prognosis	Onko osto perehtynyt markkinointistrategioihin ja asiaankuuluviin markkinoihin? Tietääkö osto pääasiakkaat?	
	Involvement quality	Is quality management included in the supplier selection process? Do purchasing and quality management form one face to suppliers?		Integration of purchasing depends on single persons. Integration occurs incidentally, criteria for integration are not existing. Quality management is subject to quality department	Purchasing supports the quality department in quality related issues resp. Supplier issues (e.g. Clain and extra expenses cases) Interfaces established	Integration and tasks of purchasing into the QM system. Responsibilities and tasks of purchasing are claely described. Resources with respective quality competence are existing in purchasing	Quality engineering function is established in purchasing. Suppliers are integrated into the QM system and carries out quality improvement programs together with the quality department	Onko QM mukana toimittajan valinnassa? Muodostavatko nämä yhden kasvon asiakkaaseen? (onko toimittajat osa laatusysteemiä)	
	Logistics targets	Are there and if so, what are the joint targets between purchasing and material handling/logistics?		Logistics targets are known to purchasing and sometimes part of supplier negotiations	Logistics targets are partially known to purchasing and are considered in supplier negotiations	In the regular process, logistics agreements are concluded together with logistcs department at substantial suppliers	Logistics targets are defined jointly with logistcs, continuously updated and implemented	Onko ja jos on, mitkä ovat yhteiset tavoitteet logistiikan ja hankinnan kanssa?	
	Involvement operative procurement	Are agreements of strategic purchasing known by operative procurement? Is a consisted information exchange ensured between both departments?		Agreements of strategic purchasing are not known to operative procurement and vice versa	Agreements of the strategic purchasing are known to operative procurement. Information exchange between departments is ensured	Strategic and operational purchasing systematically excahnge important subjects about suppliers (approach, agreements, problems). Agreements with suppliers are known to operative purchasing and are implemented	Strategic agreements with the supplier are fully implemented by operative procurement and are complied. Topics of operative procurement are agreed with suppliers by strategic purchasing.	Onko strategisen hankinnan sopimukset tuttuja operatiiviselle hankinnalle? Miten tiedonkulku on varmistettu?	
	Involvement risk management	Is risk management an integral part of the purchasing process?		Less involvement of purchasing	Responsibilities within purchasing are clearly described and communicated to the employees	Involvement and tasks of purchasing at the risk management process are described. Implementation follows widely the process description	Risk managementis an integrative part of the purchasing process. Cross-functional involvement ensured and documented	Onko riskienhallinta osa hankintaprosessia?	
HR	Human resources and Leading							Henkilöstöjohtaminen ja resurssit	
HR1	Job descriptions and competencies							Työn kuvaukset ja ammattitaito	
	Functions	Are key functions described in a generic way?		Individual purchasing functions are described in general	Substantial purchasing functions are standardised, described, documented and adapted to firm strategy	Purchasing functions are described in detail and agreed with cross-functional partners. Descriptions of purchasing functions are standardised at all sites	Developments/tendencies of job profiles are observed and forwarded for review on group level	Onko päätoiminnot (työnkuvat) kuvattu yleisellä tasolla? Onko samankaltaiset kaikkialla organisaatiossa?	
	Technical Competencies	Is there technical competence available in purchasing? Are designated competences available, e.g. advanced sourcing engineer?		Partial existence of technical competence, further development is planned	Technical competence in purchasing is existing for all substantial commodity areas	Technical competence in purchasing is existing for all substantial commodity areas. Project management competence in purchasing is sufficiently developed for efficient collaboration with project teams	Competencies for all substantial commodity areas are existing and will be continuously developed remedial and temporary introduction of special knowledge (e.g. Consultants)	Onko ostolla teknistä osaamista hankittavista tuotteista? Millä tavoin sitä pidetään yllä?	
HR2	Personnel selection and integration							Työntekijöiden valinta ja kouluttaminen/perehdyttäminen	
	Selection	On which methods / systematics is the recruiting process based on? Is recruiting executed in a systematic and structured manner?		Recruiting is mainly based on experience	Recruiting is based on generally described purchasing job profiles	Recruiting occurs methodically, structured and is aligned to the vacant purchasing function	Recruiting occurs on the basis of a competence mode. Structured interviews on the basis of standardised interview questionnaires with systematic and cross-functional analysis of results	Millä tavoin rekrytointi hankintaan tapahtuu? Millä tavalla työntekijöiden etsiminen on tehty? (systemaattisesti ja järjelmällisellä tavalla?)	

	Integration/training	Are training plans available? To what extent?		Training plans are under development	Training plans exist for few functions. Supervisor/Coach is defined	Systematic integration based on training plans with defined checkpoints. Availability for substantial purchasing functions	Cross-functional training plans are enhanced by target agreements. Feedback dialogues after completion of integration period	Onko koulutus/perehdytys suunnitelmat olemassa? Millä tasolla ne on?	
HR3	Performance appraisal & career development							Palkitseminen ja urakehitys	
	Target agreements	Are targets defined on employee-level? To what extent? Do targets contain qualitative and quantitative elements?		Target agreements on the non-managerial level is not existing	Occasional finalisation of target agreements on the non-managerial level. Target agreements include qualitative and quantitative targets	Target agreements finalised with the complete staff. Continuous support and review	Target agreements are coordinated and defined with cross-functional partners if necessary, reviewed during the fiscal year	Millä tavalla tavoitteet määritelty työntekijätasolla? Missä laajuudessa? Onko kvalitatiivisiä ja kvantitatiivisia elementtejä?	
G	Career development	Are there regular conversations in respect of employee development? Is there a structured process to identify potential candidates?		There are no conversation in respect of employee development	Unregular exchange with potential candidates	Annual structured review of potential candidates and initiation of development measures	Group/Regional wide review of potential candidates and introduction to the company procurement network	Käydäänkö säännöllisesti keskusteluja työntekijän potenttiaalisesta urakehittymisestä? Onko strukturoitu tapa potenttiaalisten rekrykandidaattien löytämiseksi?	
	Feedback process	Is there a formal and regular procedure of monitoring and feedback established?		There is no feedback procedure in place	Remedial request of single feedback from employees	Application of the available human resource instruments and remedial feedback of cross-functional partners	Annual employee dialogue of employees with purchasing department manager. Cross-functional, regular feedback with process partners (e.g. Workshops, customer satisfaction surveys etc) Bottom-up feedback established	Onko säännöllistä ja muodollista tapaa tarkkailla ja antaa palautetta? Myös muilta kuin osto-osastolta?	
CO	Controlling							Ohjaaminen	
CO1	Controlling system							Ohjaus/mittaus järjestelmät	
	Target results definition (budget and targets)	Are the targets for the purchasing function derived from the business plan of the group? Is purchasing involved in defining its targets together with executive management?		Purchasing targets are derived isolated out of business planning targets	Purchasing targets are derived from the business planning targets under involvement of purchasing. Targets are not cross-functionally agreed	Purchasing is comprehensively involved in the target setting of the business unit planning process. Purchasing targets are partially cross-functionally accepted based on rolling forecasts	Purchasing is significantly involved in the target setting of the business unit. Input out of procurement markets are considered in the planning process. Impact of purchasing targets on business results are integrated in the budget and rolling forecast	Onko hankinnan tavoitteet johdettu liiketoiminnan tavoitteista? Onko osto mukana määrittelemässä tavoitteita johtoryhmän kanssa? (budjetti ja aikataulut)	
	Target breakdown	How are targets broken down? Are they detailed on employee-level?		There is no structured target breakdown in place	Single financial results and performance figures are defined and remedially reviewed	Substantial financial results and performance figures are defined and are reviewed regularly	Targets are broken down and structured based on scorecard targets (e.g. Processes, finance, customer/market, employee/knowledge/innovation) and reviewed regularly on the basis of rolling forecasts	Miten tavoitteet on laitettu osiin? Onko yksityiskohdat työntekijätasolla ja strukturoitu?	
	Measurement figures	Are measuring parameters defined?		Only limited target follow-up based on existing performance figures possible	Substantial performance figures (e.g. Balanced scorecard) are implemented	Group-wide mandatory performance figures are completed by own ones for particular areas	Performance figures for all scorecard targets are continuously and cross-functionally defined	Millä tavoin mittaamista tehdään, millä parametreillä?	
CO2	Controlling process & structure							Ohjausprosessit ja rakenne	
	Organisational structure	Is the function of planning and steering available and established? Are the planning and steering tasks of purchasing clear and documented?		Planning and controlling function for purchasing control is not existing	Planning and controlling function for purchasing control is existing	Planning and controlling tasks of purchasing are described and implemented as an own function with defined processes	Planning and controlling tasks of purhcasing are applied as described and are integrated into the operative controlling processes of the business unit	Onko funktio suunnittelulle ja ohjaukselle olemassa? Miten se on dokumentoitu?	
	Responsibility	Are roles and responsibilities clear and described?		Tasks and responsibilities are insufficiently described	Tasks and responsibilities are sufficiently described	Tasks and responsibilities are described according to requirement profiles and are applied	Tasks and responsibilities are included in an superior controlling guideline of the business unit. Implementation mandate for agreed standards in purchasing control is established	Onko roolit ja vastuut kuvattu selkeästi? (ohjausprosesseissa)	

	Target controlling process	How are deviations from plan handled?		Target-/Actual-comparisons are unregularly applied	Target-/Actual-comparisons are regularly applied. Necessary correction measures initiated partialy	Target-/actual-comparisons are applied on the basis of rolling forecasts. Correction measures are consequently implemented	Business results of the identified measures are reviewed and documented	Miten poikkeamat tavoitteista hoidetaan?	
CO3	Controlling methods and tools								
g	Commodity codes	Do you classify your material to any kind of commodity code (e.g. ecl@ss)?		Commodity code classification only for selected commodity areas	Correct and complete commodity code classification for "direct material" is ensured	Commodity code is defined as a mandatory data field for order release. Continuous revision of wrong commodity code classifications	Correct and complete commodity code classification is ensured for the total purchase volume	Luokittellaanko tuotteet "commodity codeilla"?	
	IT Support	Are you able to perform spend analysis? On what level of automation?		Purchasing volume is available only for the local ERP System	Purchasing volume is generated by calculating according to a group-wide accepted method and can be retrieved to specific purchasing needs.	Regular provision of purchase volume in a central database (e.g. Purchasing information system)	Availability of all purchasing volume data in a central database on a monthly basis and active support of standardised supplier number matching process	Pystyttekö tekemään spend analyysin, kuinka automatisoitu menetelmä se on?	

Questionaire 2:

	Kysymykset	Vastaus
1	Ulkoapuolelta ostettavien tuotteiden ja palveluiden osuus kustannuksista on korkea ja kasvussa	
2	Ylempi johto tunnistaa että hankinnalla on tärkeä osuus kilpailuaseman luomisessa ja säilyttämisessä	
3	Hankinta raportoi suoraan ylemmälle johdolle	
4	Yrityksessämme hankinta on vuorovaikutuksessa strategisissa ja poikkifunktionaalisissa prosesseissa, linjajohtajien ollessa vahvasti mukana.	
5	Yrityksessämme hankinnan tärkein tehtävä on hankkia paras mahdollinen arvo alhaisimmilla kokonaiskustannuksilla	
6	Yrityksessämme ostotarpeet ovat vahvasti homogeenisiä liiketoimintayksikköjen välillä	
7	Eri osto-osastoiden rooleissa ja asemissa ei ole suuria eroja liiketoimintayksikköjen välillä	
8	Kyvyt ja taidot eri liiketoimintayksikköiden ostohenkilökunnalla ovat sillä tasolla että he voivat osallistua korporaation hankintastrategian tuottamiseen	
9	Osto-organisaatiot eri liiketoimintayksiköissä toimivat vertailtavilla tasoilla ammattimaisuutta	
10	Kyvyt ja taidot korporaatiotasolla ovat riittävät käsittelemään ostosynergioita	

Questionaire 2 (in english)

	Kysymykset	Vastaus
1	The purchasing spend with outside parties is high and increasing.	
2	Top management recognises Purchasing as an important contributor to the competitive position	
3	In our company the purchasing function reports directly to top management.	
4	In our company purchasing relates to strategic and truly cross-functional processes, with high involvement of line management.	
5	In our company, purchasing’s main goal is achieving the lowest total cost against highest value.	
6	In our company there is a high degree of homogeneity in purchasing needs across the BU’ s.	
7	There are no significant differences in the role and position of the different purchasing departments across the BU’s of our company.	
8	The skills and capabilities of purchasing personnel in the different BU’s are more than adequate for participating in formulating corporate purchasing strategies.	
9	The purchasing departments in the different BU’s operate on comparable levels of professionalism.	
10	The skills and capabilities on the corporate level are adequate for managing corporate purchasing synergy.	